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CASSELL'S
BOOK OF THE HOUSEHOLD

A

Work of Reference

ON

DOMESTIC ECONOMY

VOLUME IV.

SPECIAL EDITION

WITH COLOURED PLATES

CASSELL AND COMPANY, LIMITED

LONDON, PARIS & MELBOURNE

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GROUP OF ORCHIDS





ORNAMENTAL FOLIAGE PLANTS.



water, brought slowly to the
boil, then simmered.

FRESH meat or poultry which
is to be boiled and eaten, must
be plunged into boiling water,
boiled quickly three or four
minutes, then drawn back and
simmered till done.

MEAT not quite fresh, or likely
to be tough, will be improved
by being washed with vinegar
and wiped.

THE liquor used in boiling
meat or roots should never
be thrown away. Soups and
sauces may be made of it.

PUDDINGS should be plunged
into plenty of fast boiling
water, and kept boiling hard
till done.

A PLAIN dinner well cooked
is better than rich viands
which are spoilt in the cooking.

When a pudding is boiled in a basin, it should fill the basin.

ROASTING meat cannot be basted too much or too often.

PASTRY, bread, and cake should never be baked in an oven with meat.

THE chief secret of making a good salad is to have the vegetables dry.

THE part which is to be topmost in the dish should, when boiling, be downmost in the pan.

SAUCEPANS which are filled with water as soon as done with begin to clean themselves.

SALTED and smoked meat should be put into cold water, brought slowly to the boil, then simmered.

FRESH meat or poultry which is to be boiled and eaten, must be plunged into boiling water, boiled quickly three or four minutes, then drawn back and simmered till done.

MEAT to be baked should be put into a hot oven to begin with.

TO leave bread or vegetables in stock or soup turns them sour.

THE light hand needed for pastry comes from habit, not nature.

ROOT vegetables should be boiled gently with the lid on the pan.

SCUM should be removed as it rises; if it is not it will dissolve and spoil the meat.

ALL vegetables, excepting old potatoes, should be put into plenty of fast boiling salted water.

MEAT not quite fresh, or likely to be tough, will be improved by being washed with vinegar and wiped.

THE liquor used in boiling meat or roots should never be thrown away. Soups and sauces may be made of it.

WHEN baking powder has been used there must be no delay in baking.

NOT to wash dishes and plates as soon as done with is to make work.

NO more water than is needed for gravy should be taken for a stew.

THE bars of a gridiron should be greased and made hot before being used.

MEAT from which soup or gravy is to be made should be put into cold water.

IF a pie or cake brown too quickly whilst baking, a sheet of paper should be laid on the top.

PUDDINGS should be plunged into plenty of fast boiling water, and kept boiling hard till done.

A PLAIN dinner well cooked is better than rich viands which are spoilt in the cooking.

CASSELL'S BOOK OF THE HOUSEHOLD.

THE TOILET.

PERFECT health is the best of all cosmetics, but nowadays few complexions are able, without some artificial aid, to long withstand the late hours, the hurry, and drive, and general state of tension which many of us, and especially people "in society," have to endure. Sanitation and *hygiene* have received a great deal of attention of late years, but there is still much that can be done by each individual to improve the physical well-being. The health is best kept at a steady standpoint of excellence by regular and simple diet, the frequent use of the bath, daily exercise, early hours, and a placid, cheerful temperament. Happy are they whose complexions can be kept in perfect order by the use only of these natural aids!

The Skin.—All people judge beauty from a standard of their own; but as the face and its complexion must, from their very position, excite notice first, we will begin by seeing how an indifferent skin may be improved, and a good one best retained. However lovely the complexion, its beauty will be entirely lost if due attention be not paid to absolute cleanliness; and the constant use of the bath will keep the skin of the face in good order, as well as that on the parts of the body less exposed to the influence of air and sun. Those whose constitutions can stand the shock, should take a cold, or at least a tepid, bath daily. Failing this, they should sponge themselves freely with cold water every morning, and take a warm, not a hot bath, twice a week. Very hot water should never be used, as there is no surer means of producing wrinkles. Hard water, too, is injurious when employed constantly; therefore, if rain-water is not to be had, water that has been boiled should always be used, and Pasta Mack, or some similar preparation, added to it. An old-fashioned but thoroughly efficient plan for reducing the hardness of water is to make a square bag of

flannel, or even of muslin, and to fill it with bran or oatmeal. If this is placed in the water for a few minutes, and frequently squeezed, in order that the goodness of the bran may pass into the water, a great improvement will be made. Fuller's earth has much the same effect. A bran bath is pleasant, owing to the increase in the circulation caused by a good rub with the particles of the bran; which is, in this instance, put loose into the water, in the proportion of a peck to a medium-sized bath half full of water. It is very important that after a bath the skin should be briskly rubbed with coarse towels, in order that the circulation may be kept up.

Soaps.—There are few matters in which each individual is so much a law to himself as in the choice of soap. Many prefer Pears'; indeed, its popularity has become proverbial. Grossmith's white glycerine is another favourite soap, and some of the choicest of the French manufactures are also of excellent quality, feeling like satin as they are passed through the hands. There are certain skins, plebeian though it sounds, which thrive under the daily application of ordinary yellow soap of a good quality, and its admirers go so far as to say that its scent reminds them of violets. When once a make of soap has been found to suit any particular skin, it should always be adhered to, for few things are more prejudicial to the complexion than a constant change and use of any and every preparation advertised. Some people declare that their skin is injured by all kinds of soap, but it is certain that perfect cleanliness cannot be maintained without it. For such tender-skinned persons, cocoa butter and Vinolia soap will be found suitable: in these medical soaps, the proportion of fatty matter is larger than that of the alkali, and consequently the most delicate skin cannot be injured by their use. Very cheap and gaily-coloured soaps

should never be purchased, however tempting their appearance; for the use of them is apt to spoil the complexion by producing a rash or an outbreak of pimples, which it is often difficult to get rid of. Milk and sulphur soap is excellent for a complexion that is naturally inclined to be blotchy. Whatever soap be used, it should never be allowed to remain long on the skin, but should be thoroughly rinsed off, or an undesirable shiny effect will be produced.

A good complexion can never be hoped for by such as indulge in the bad habits of sitting over the fire, or of sleeping with the face covered with the bed-clothes, or in the immoderate use of sweet-meats, pastry, spices, or condiments.

Sunburn.—Some faces suffer more than others from exposure to sun, wind, or dust; but few women bent on the enjoyment of an excursion on the river or in the country would care to smear their faces with cold cream, and to muffle themselves up in a gossamer veil. This is a favourite prescription for the prevention of sunburn:—On returning home from such an outing, the first thing to do is to bathe the face with warm water in which bran or oatmeal has been steeped, or with soft water to which have been added a few drops of Eau de Cologne or toilet vinegar. Great care must be exercised in drying the face thoroughly with a soft towel. If the face be coated with a layer of dust, as is often the case after a few hours' cycling, driving, or riding, this should be removed with a very little cold cream rubbed in with the finger-tips. When it is nearly all absorbed, the face must be wiped with a soft handkerchief, then washed in the usual way.

Cold Cream.—Of preparations to be rubbed in at night, in order that the face may become soft and smooth, the name is legion. We fancy that few women have a sufficient supply of vanity to enable them to pass a comfortable night with their cheeks packed up in slices of cold veal, as was recommended recently by an American writer on the subject of beauty. A far pleasanter plan is that of washing the face at night in soft water, and, when dry, of rubbing in a little—very little—cold cream, which, when good, is one of the best emollients known. An excellent cream is made by melting together four parts of olive-oil and one of white wax. When they are thoroughly amalgamated, a few drops of otto of roses may be added, and colouring matter, if considered an improvement. Another good recipe consists of equal parts of spermaceti, olive-oil, white wax, and benzoated lanoline. In making either of these two creams, the ingredients when melted must be beaten till cold, or the various portions will separate, and give a curdled appearance to the mixture. The

cream should in the morning be taken off the face with elder-flower water, Rowlands' Kalydor, or orange-flower water, and the face then washed in the usual way. Vinolia is a most soothing and delicately-perfumed emollient, and extremely pleasant to use when the skin is in an irritable condition owing to exposure to the sun, or when inflamed by the bites of gnats or midges.

Tinting the Cheeks.—It has been frequently remarked that those women who indulge most largely in tinting the cheeks, are those who have naturally a good complexion, but who, not satisfied with letting well alone, seek to improve their charms by a method which, in time, invariably destroys them altogether. Too many of these fair ones begin with the merest *souçon* of colour; but no sooner do they become thoroughly accustomed to the appearance they present, than they use rather more, and are not quite so careful in applying it dexterously. So they go from bad to worse, till all who see them turn away with a shudder. Should they repent of their folly—and here and there no doubt is one who does so—they cleanse their cheeks, only to find the once beautiful natural bloom ruddled and blotchy, if nothing worse.

The best advice to those who are contemplating the beginning of such painting is, "Don't," and this cannot be too strongly enforced. Should, however, any woman persist in applying colour to her face, let her recognise at once that there is a right and a wrong way of doing it, and let her thoroughly understand that in this matter the art of *concealing the art* is of primary importance. The cheeks should be first smeared over with cold cream, which must be gently wiped off again, so that, though a good proportion is rubbed away, the face is still stieky. The rouge is next carefully laid on the cheeks; but it is almost impossible to use too little, especially towards the edges, where it must fade off softly and gradually into the tint of the natural skin beyond. A very little good powder—such as Vinolia powder—should then be puffed over the colour, and also over the edges of the tinting. This is done to soften the general effect, and sufficient only must be used for this purpose—not enough to be visible. Any loose powder must be carefully dusted off.

Another safe way of tinting the face is by the use of earmine powder. After the cold cream has been applied in the manner described, a small quantity of the colour is rubbed over the cheeks, left on for a minute or two, then carefully wiped off with a soft rag or a piece of wash-leather. This gives a better tone of colour than ordinary rouge; but, of course, a considerable amount of skill is

necessary in applying it. The palest shade of powder should be chosen, not that of a deeper tint, which not unfrequently contains ingredients deleterious to the texture of the skin. It will be found an extremely difficult matter to get both cheeks alike, but, unless they match, the owner will soon find herself an object of ridicule rather than admiration.

Many women, generally those who have naturally delicate complexions, strive to improve them by dusting powder over the lower part of their cheeks in order to heighten the brilliancy of the colour below the eyes. Others consider their cheeks too ruddy to be beautiful, and seek to tone them down. Still others powder the skin generally. The paler complexions assume a ghastly tinge under such treatment, and resemble faded wax more than anything else. Greatly disappointed would such women be, were they aware that in ninety-nine cases out of a hundred, the powder can be at once detected, in spite of their belief that they will be credited with the possession of a naturally beautiful complexion. Of course, there are some forms of skin eruptions in which powder, and more especially arsenic powder, is beneficial; but these are another matter, and should never be used except under medical advice. Even as regards starch or other "innocent" powders, it is never to be forgotten that if so used that the art can be seen, it is no longer art in any sense. The best and most innocent means of "softening" the complexion is probably to rub in a little dry oatmeal very gently, leaving no loose flour behind it. Ladies who powder and paint in supposed imitation of the heightened charms of singers and actresses, are apt to forget that these latter are only seen *at a distance*, which adds a charm to the broad and glaring effect, precisely as it does to the coarse daubing of the scene-painter.

Wrinkles.—Women generally have a strong objection to the appearance of the first wrinkles upon their faces, and congratulate themselves that the present style of wearing the hair at any rate partially conceals these prints of Time's footsteps. Here they make a great mistake. The smooth white foreheads resembling the surface of a billiard-ball, mark those people who are devoid of feeling, and possessed of little or no sensitiveness: those who have gone through life with an indifferent feeling towards the affairs of others, as well as a *laissez aller* disposition as regards their own. From an artistic point of view, after a certain age, a moderately-wrinkled face is far more beautiful than one bearing no honourable scars of this sort. It must, however, be remembered that an unduly-lined forehead and face are as painful to critical observers as one that is perfectly smooth.

Too many persons, in their passage through life, allow their features to become-puckered up into lines of irritability; they worry about trifles that are not worth worrying about, or get into the bad habit of making nervous grimaces. These are the wrinkles that so often spoil an otherwise pleasing countenance, and very different are they from the lines which mark a scholar, or a person of a tender, sensitive nature.

For use by those people who mourn over their wrinkled features, the following lotion is to be recommended:—

- 1 oz. of tannin,
- 2 „ pure glycerine,
- 4 „ rose-water,
- 1 „ spirits of wine.

Another harmless wash consists of one part each of hazeline and spirits of wine, and two of water. This hazeline is an invaluable preparation, and should be always on the toilet table. A gentle but thorough rubbing of the cheeks and forehead after washing is said to disperse wrinkles, and even if not efficacious, is harmless. The daily application of cold cream is frequently recommended, under the idea that it restores the fatty glands of the skin, which, by becoming dried up and shrivelled, cause wrinkles.

Care of the Eyes.—With the eyes, again, a caution is necessary, especially to very young women, who are desirous of making the most of the charms with which Nature has endowed them. They are not unfrequently under the mistaken impression that belladonna, or Eau de Cologne taken on lumps of sugar or in a glass of water, will improve the brilliancy of the pupils of their eyes. There could not be a greater error. Belladonna has a most injurious effect after a time. It acts by dilating the pupils of the eyes greatly beyond the natural action—making them, in fact, as much dilated in the light as they should be in the dark; this strains the sight, and gradually causes it to wear out, owing to the abuse of its nervous sensibility. Instances have been known in which the unfortunate victim has not only ruined her appearance, but has lost her eyesight altogether by its use. Eau de Cologne also, though stimulating for the time, induces a proportionate depression afterwards, which in itself has the effect of dimming the lustre of the eyes. The would-be beauty must be content to leave her eyes alone, using a soothing wash occasionally if they have, from one cause or another, been more than usually tried.

Cold water is the best and safest lotion, but should not be so cold as to be icy. Opinions differ as to the wisdom of opening the eyes when the face is immersed in a basin of water.

Some contend that the shock is too much for any but the strongest vision, others that there can be no finer eye tonic. The truth seems to be, that, if this has been a habit since childhood, the eyes cannot be injured by it; but if this cold bath is only taken at rare intervals, it is certainly too vigorous a proceeding. Hot water, if used habitually, is weakening to the eyes, but warm or tepid water may be used in very cold weather. A particularly pleasant eye-wash is composed simply of milk and water in equal proportions, and has the merit of being perfectly harmless. Cold tea forms a slightly astringent lotion, and does good when the eyes have been much strained. Weak brandy or whisky-and-water is agreeable to use after a long drive or walk along a dusty road.

Zinc or lead lotions, to be had at any chemist's, are often useful tonics for the eyes in some kinds of inflammation, but not all, and should not be used unless specially prescribed. When the eyes are inflamed or irritated, the safest of all lotions to be used without advice is hot water to which a little tea or hazeline has been added.

Eyebrows and Eyelids.—Until a face is seen entirely without eyebrows, one can scarcely realise what an element of beauty they constitute; but, for all that, the pencil should not be resorted to, except as a last resource. Much of the advice already given with regard to tinting the cheeks, bears reference equally well to darkening the eyebrows. Both these operations should be performed in a room exposed to the full light of day, for few things spoil the expression of a face more than unduly heavy eyebrows. Great art is necessary in pencilling them successfully, and no use should be made either of chalk, or of the pencils sold for the purpose. They are both too hard, and, in being frequently passed over the delicate hairs, are apt to cause injury to the roots, owing to which the eyebrows may gradually disappear altogether. The tip of a very small soft stump, such as those used for crayon drawing, should be held over the flame of a candle until it is well coated with carbon, rubbed on a piece of paper so that all the particles have been thoroughly smoothed down, and drawn carefully over the eyebrows with a firm straight touch. Follow the outlines of the natural eyebrows, and go over them once or twice till the requisite depth of colour is obtained. It is a great mistake to snip off the tips of the eyebrows and hairs of the eyelids, for the desired effect of lengthening the hairs is not produced by this, but each individual, instead, becomes thickened, and so the delicate pencilled effect is lost altogether. If the eyebrows are scanty and inclined to be downy, a little pure vaseline rubbed into the roots at night

will improve them. A soft brush (a tooth-brush will do, if very soft) should then be passed over them several times from the nose outwards, and an improvement will soon take place if this course of treatment be followed regularly.

The Nose.—The nose, like the eyes, should be interfered with as little as possible, for Nature is apt to revenge herself upon any meddler with this feature by making its later condition worse than the first. A nose that is inclined to be red is a sore trouble to any woman, and as soon as she notices this undesirable appearance she should, without delay, inquire of herself whether she takes sufficient exercise to keep her circulation brisk, whether she indulges in rich and unwholesome food, seasoned by many condiments, whether her digestion is in good order, and whether her corsets and boots are so well fitting that she is never conscious of any discomfort arising from their use. Many good authorities consider that a prevailing style of stiff and high military collars tends to redden the nose; but now, no doubt, the fashion will last but a very short time, and that cause will be removed till a turn of fashion's wheel, in due course, brings it uppermost once more. No lotions should ever be used that have a tendency to inflame this feature of the face, which requires, as it were, to be treated with the greatest respect. Cold cream is always safe, or pure vaseline, or toilet vinegar, or a few drops of Eau de Cologne in soft water. If powder be needed, it should be pure starch or rice-flour only.

Some people are much and often troubled by the appearance of tiny black specks, which have a tiresome habit of appearing upon the nose. Except in very severe cases, in which medical aid should be sought, they are easily removed by rubbing them with a towel, or by gently squeezing them between the finger and thumb till they start forward, when they can be taken off with the point of a fine needle. They are simply caused by stoppage of the flow of the fatty matter in the glands of the skin, and become dark in colour owing to the readiness with which dust and smuts in the atmosphere adhere to them. They should be removed immediately after the face has been washed, and while the pores are still open. A little cold cream or soothing lotion should be applied directly after the operation.

The Mouth.—There is no feature more readily spoilt by the individual, by old or young, man or woman, than the mouth, and constant guard should be kept to avoid falling into bad habits which will thoroughly alter the curves and graceful lines into which it would perhaps fall of its own accord. The late Mrs. Ewing has written

one of her most charming of short stories for young people on this very subject, and much of the practical good sense expressed by the godmother in this tale should be carefully read and applied to themselves by grown-up people as well as by the young. "The lips and all the lines of the face," she says, "will take shape of themselves according to the temper and habits. Under-bred and ill-educated women are, as a general rule, much less good-looking than well-bred and highly-educated ones, especially in middle life; not because good features and pretty complexions belong to one class more than to another, but because nicer personal habits and stricter discipline of the mind do."

The principal malady to which the lips are subject is the becoming chapped after exposure to the cold wind, or by moisture caused by the veil, which is brought low over the mouth and becomes wet by the condensation of the breath. Many people of a nervous temperament fall into the evil habit of biting their under-lip, with the result of causing it to swell up unduly, and to be in a chronic state of redness and roughness. A little vaseline or glycerine put on the lips at night with a paint-brush will do much to alleviate the roughness, and the lips should also be lightly smeared with vaseline before going out into the cold air. It is quite possible to put on so little that it is not visible, but nothing looks more unpleasant than the lips oozing with grease when too much is applied. The same carmine powder used for the cheeks may be employed for the lips, if considered necessary, but the moisture is very apt to disturb the colour and to cause a ruddled and smeary appearance.

The Teeth.—No mouth can be called beautiful which, when smiling, displays a row of gaps and jagged teeth, like a broken-down fence with some of the rails missing, or, worse still, a set of teeth sadly in want of a brush. The former evil occasionally arises from ill-health, or other circumstances over which no self-control can be exercised, and a few visits to a good dental surgeon will probably set matters straight. The latter evil is utterly inexcusable, as it often arises from sheer laziness or from sluggardly habits. The teeth are more easily kept in good order than any part of the body, provided only that regular cleansing is performed night and morning. A very hard tooth-brush should be avoided; a medium one should be used only by those whose teeth are strong and perfect, a soft one by those who are troubled with tender teeth and gums. The following is the formula for an excellent and reliable dentifrice, and one which is pleasant to use:—

Precipitated chalk	-	-	-	-	1 oz.
Borax	-	-	-	-	2 drachms
Powdered orris root	-	-	-	-	2 drachms
Bicarbonate of soda	-	-	-	-	2 drachms
Otto of rose	-	-	-	-	1 drachm

Any chemist will add a little colouring matter if a pink dentifrice is preferred. The otto of rose, which is rather expensive, may be omitted, and lavender or violet perfume substituted. A very simple dentifrice, which costs nothing but a little trouble, can be made of a piece of bread toasted till of a rich brown colour, but not black. It is then powdered as finely as possible. Powdered charcoal is good and harmless, but not very pleasant to use. Then there is the ever useful prepared chalk, either camphorated or plain.

The brushing of the teeth should be not only round and round, but up and down also. A special brush should be used to cleanse the inside of the teeth as well as the outside, and after every meal the mouth should be rinsed out with lukewarm water, in which have been sprinkled a few drops of toilet vinegar or Eau de Cologne. Too much of either, it must be remembered, will cause the enamel of the teeth to become softened, when decay will soon set in. A pleasant mouth wash may be made of six parts each of water and orange-flower water and five parts of Eau de Cologne. To keep the teeth in good order, care should be taken in the choice of diet; and onions, cheese, radishes, and chutney avoided, owing to the power they have of making the breath unpleasant. Much of this may be improved by washing the mouth out thoroughly with water in which liquorice has been dissolved; parsley vinegar, diluted with water, answers the same purpose, and there are many harmless and pleasantly-flavoured cachus sold which are more agreeable than either of these remedies. Should the gums show signs of becoming soft and inflamed, a few drops of tincture of myrrh and borax may be used with advantage when the teeth are cleaned.

The Ears.—There is little more advice to be given with regard to the ears than that already noted as regards the features of the face. They require keeping scrupulously clean; but, after washing, should be wiped, in all the numerous ins and outs, with nothing harder than a soft handkerchief. Nothing whatever should be pushed into them with a view of removing wax or any substance that may have got in by accident. Should any wax be clogging up the opening of the ear, thus causing temporary deafness or ringing sounds in the head, a few drops of sweet oil or glycerine may be dropped in, and afterwards gently syringed out with warm water. The fashion of wearing long and heavy earrings has happily

gone; indeed, earrings of any sort are rather the exception than the rule nowadays, and hence there is little reason for cautioning women against this infallible means of dragging the ears out of shape.

The Hair.—Many girls sigh for a good head of hair, little heeding that much of the beauty of hair is dependent upon their own exertions. The more it is brushed, the thicker and longer it becomes, except in the case of those whose health and constitution generally are weak. As a rule, it is impossible to make too much use of the brush, but it must be applied with judgment. The head, rather than the hair itself, must be brushed, as the friction is the means of stimulating the roots and encouraging them to grow stronger. Both morning and evening the hair all over the head should be divided into wisps with the comb, each lock being carefully brushed separately until the whole of the scalp has come in for its share of attention.

Brushes and Combs.—Only the best quality of brushes should be chosen, and the inferior and cheaper sorts avoided, owing to the way in which the bristles become entangled in the strands of hair, thereby causing them to snap. For the same reason, brushes should not be too long in the bristles. A very soft brush should be used during the day, when it is necessary that the front hair should be re-arranged; indeed, a good-sized soft tooth-brush, or one such as is used for a baby's head, is very convenient. The choice of a comb is as important as that of a brush; the teeth of the cheaper combs are very apt to become split when they have been in use for a time, and they then catch in the hair and tear it. A tortoiseshell comb is far superior to those made of any other material, and it will, though somewhat costly in the first instance, outlast many cheaper ones if moderate care be exercised with it.

Cutting and Washing the Hair.—To keep the hair in good order, it is essential that, once a month, the ends should be tipped by a good hairdresser. It is a difficult matter to persuade people that if this operation, however disagreeable, is not performed at regular intervals, the hair will become split at the ends, and that, when cut, far more will have to be removed than if the monthly ordeal had been undergone. No woman should ever be tempted to cut her hair herself; the result will only be that it will be of many different lengths, and when next done by professional hands the rest of the hair will have to be cut according to the length of the shortest strands. Opinions vary considerably as to the wisdom of washing the hair frequently, owing to the fact of its becoming uncomfortably dry

and brittle, and being very unmanageable for some days afterwards. At the same time, the brisk rubbing with a coarse towel after shampooing is of immense advantage in stimulating and promoting the growth of the hair. The hair may be kept in a cleanly condition, without wetting it much, if a decoction of rosemary be well rubbed over the head with a sponge. The leaves are boiled in water for about five minutes; the liquor is strained off, and can be used when cold. One teaspoonful of liquid ammonia to a pint of warm water is a pleasant lotion for the head, or a lump of ammonia as large as a filbert dissolved in a quart of boiling water will have as good an effect. The water in the latter case, when cool enough, should be beaten with the hand until there is a stiff lather. The wash must be thoroughly rinsed out of the hair with both warm and cold water. It is questionable whether soap has a beneficial effect upon the hair. Many people use a new-laid egg beaten up in a little warm water; some use a little soda, but this is injurious; some even prefer such odoriferous matters as a raw onion or paraffin, though, for obvious reasons, these can scarcely be recommended, unless the subject of such treatment lives by herself on a desert island.

The use of pomatum is scarcely less unpleasant, but little is sold now. Here and there is found a head of hair that requires the nourishment of some greasy matter, but this must be never applied so that much of it lies upon the hair itself. People generally smear it lavishly upon the hair, instead of combing the hair aside and rubbing it over the scalp, as would be done in the case of hair-wash. Vaseline, in one of its many forms, is superior to most kinds of grease; but a delicate pomade may be made of the following materials:—

Oil of sweet almonds	-	-	-	-	-	7 oz.
Spermaceti	-	-	-	-	-	3 oz.
White wax	-	-	-	-	-	$\frac{1}{2}$ oz.
Oil of roses	-	-	-	-	-	two or three drops.

When melted, this mixture should be strained through a fine sieve, and stirred and rubbed down to render it perfectly smooth as it cools. The best of all unguents when greasy nutriment is really required for the hair, is Lanoline, a natural hair-fat, which is carefully prepared from the oil in sheep's wool, and which never becomes rancid.

By such as wish to promote the growth of the hair, heavy hats and bonnets should never be worn; neither should it be tightly twisted up at night or in the daytime. The hair should be unfastened and allowed to "air" for a considerable time every day, and, except in the height of summer, it is very beneficial to expose it out of doors to sun and wind. The present style of dressing the hair is injurious,

owing to the manner in which it is drawn towards the top of the head, a direction in which it was never intended to go.

Curling the Hair.—Those votaries of fashion whose hair curls and waves naturally are to be congratulated in these days, when the coiffure consists entirely of fluffy curls, bows, and loops of hair—the lighter and more billowy the better. The use of heated irons to torture naturally straight hair into the waves so much admired is fatal to the hair, and is apt to dry it and to render it too crisp, unless a considerable amount of care is exercised in their application. The least injurious way of curling hair is by the old-fashioned curl-papers or strips of thin silk. These cannot possibly tear or break the hair, and form very pretty loose waves. Some women twist the hair in and out between the prongs of ordinary hair-pins, but this is apt to form a frizz too small to be elegant, and the iron or steel of the hair-pins does no good. Before the pin is taken out, the hair is generally damped and pinched between the irons, but for many textures of hair this additional treatment is unnecessary. A more satisfactory way, when curling-tongs are preferred, is to pinch up the tips, which must first be slightly moistened, and to roll the rest of the hair round and round the tongs until these are as near the head as they can be; hold them thus for a minute or two, then reverse the operation. The heat of the tongs must be carefully tested on a piece of paper before they are used; so long as they continue to scorch the paper, the heat is too fierce for the hair.

There are an infinite number of patent waving and curling-pins to be had now, all of which claim the possession of special advantages, but, as some suit one class of hair more than another, we can only advise ladies to try a few experiments till they find a make that is successful in their own special case, or to take the advice of a professional upon the subject.

Dyeing the Hair.—It is strange the prejudice that exists against grey or white hair, and which is strong as ever, in spite of the admiration we all feel for a handsome old man or woman, with beautiful white hair, soft as silk and glistening as silver. No sooner do most people—women more especially—discover a grey hair among their tresses than they pull it out, and anxiously await the appearance of the next, which is treated in like manner, till at last they become so numerous as to baffle their efforts in this direction, and dye is resorted to. No greater mistake could be made, for Nature is so kind, if left to herself, that many a man and many a woman owes a great improvement in

appearance to the softened effect given by the despised grey hair. The eyebrows and eyelashes become softened, so that they harmonise with the whitened locks, and often the cheeks become touched with a delicate flush of colour, which puts the finishing touch to a beautiful face. When Art steps in, she too often ignores the eyelashes and eyebrows, and does not even tint the hair its original colour, but dyes it black, when perhaps the eyebrows are still reddish or blonde, forgetting that in Nature all the colouring is arranged in perfect harmony. Few “make-ups” are more quickly detected than dyed hair. It is impossible to prevent the skin round the neck, ears, and forehead from taking a dirty hue consequent upon the absorption of the colouring matter by the pores. For this reason, if for no other, the use of dyes should be avoided, or if really considered essential, they should be applied only by professional hands. The hairdresser will probably find it necessary to bleach the hair first before applying the dye, so that the step once taken is irrevocable. It is a matter that cannot well be managed at home, owing to the difficulty in getting one uniform tint over the whole of the head.

False Hair.—It is long since so much false hair has been worn as at the present time—at least, so say the hairdressers—and so elaborate is the fashionable style of dressing the head, that few women have the required quantity of hair, the time, or the skill to do it without artificial aid. The fluffy soft curls, the wavy fringes, the loose twists and coils, are all to be had mounted on pins or combs, ready to be tucked in amongst the natural locks, just where they will show to the best advantage; and, in fact, it may be noticed that very often the hair takes the place hitherto occupied by a bonnet. Women whose hair is naturally (or unnaturally!) scanty may be pardoned this extravagance, but those who have even a moderate clothing of hair should endeavour to make the most of what they have, and consult their ingenuity in devising a style that will show it off to the best advantage. Though the wearing of false hair seems such a simple matter, those who begin it will soon find that it has constantly to be sent to be re-dressed and re-coloured, thus involving a second coiffure for wear while the first is being put into order. Dead hair, as it is called, soon loses its colour, so that it needs occasionally to be re-dipped. The coiffure cannot be kept in good order unless it be combed, brushed, and curled every morning; any head will have a frowsy appearance unless it is thus attended to. To make the operation easier, the hair is fastened to a papier-mâché scalp covered with velvet. These are to be had from any good hairdresser.

The Hands.—Next to the face and head, the hands attract most attention, and may be taken as a sure index to the mind and disposition of their owners. We can all number amongst our acquaintances those possessed of plump, pallid, lazy hands; those who own firm muscular hands, with well-trimmed nails, hands which give confidence in the general ability and trustworthiness of their owner; and those whose fingers bear the marks of old stains, with ragged nails, cut with no care, and displaying on no one finger those delicate "half-moons" that are considered a beauty. Volumes have been, and no doubt are still to be, written concerning character as displayed in the hands, but our business just now is with keeping the hands and nails in good condition, be the shape what it may. Though certain shapes of fingers and nails are more admired than others, it is the cleanliness, after all, which is one of the most characteristic differences between a woman or a man of a refined and of a coarse and rough nature.

The typically beautiful hand should not be dead white, but tinged with a healthy flesh colour, the inside of the palm rosy, the joints and veins well covered. The tips of the fingers should taper gradually towards the nails, which should be pink, like the inside of some shells, the half-moons at the base all regular in shape and kept carefully free from skin, the nails filbert-shape and not allowed to grow too long, or cut, or, needless to say, *bitten*, too low. The beautiful hand need not necessarily be an idle one, for it may be protected from injury by the use of gloves when it is engaged in gardening, light carpentry, and in the various occupations to which women as well as men are now turning their attention.

The simplest way of keeping the texture of the hands soft and smooth is by the constant use of cold cream, glycerine jelly, vaseline, or some similar emollient. This should be rubbed on plentifully the last thing at night, after the hands have been washed with good soap and warm soft water. An old pair of light kid gloves should be then drawn on, and kept on the hands all night. One of the emollients named should be well rubbed into the hands every time they are washed. Neither very cold nor very hot water should be used, as the former is apt to chafe them, and the latter to redden them unduly. If the hands are soiled or rough, it is a good plan to wash them over with warm water and to rub them with fine sand. A sand-ball, or one composed of sand and glycerine, should be kept handy on the washstand. Oatmeal, too, is pleasant, if the gritty nature of the sand is disliked. The hands should be always very thoroughly dried, as much of the chapping to which many are liable is due to imperfect drying.

Some people are so unfortunate as to have hands that are in a chronic state of dampness, which is sometimes hot, sometimes cold and clammy. This occasionally arises from excessive constitutional weakness, and unless the cause can be traced, little hope can be entertained of a permanent cure. Something may be done by washing the hands in water as hot as they will bear, in which a little alum has been dissolved. When they have been well dried, a simple powder may be dusted into them, and should always be sprinkled into the fingers and palms of the gloves. Belladonna liniment rubbed into the hands the last thing at night has also a perceptible effect in reducing excessive perspiration. But tonic regimen is the main thing.

Englishwomen, as a rule, pay little attention to their hands as compared with their American cousins; but now that the art of manieuring has been introduced, and as it is already overstocked as a profession for women, we may very fairly expect that carelessly-kept hands will be a thing of the past.

The Finger-Nails.—There is considerable art in cutting the nails properly, and many people are never able to perform this little operation for themselves. The shape of the fingers should be carefully followed, and the nails left so long that on holding up the hand back to the light and in front of the face, a narrow rim of nail is seen beyond the fingertips. The corners should be rounded off, but not cut away too much, or they will become sore. Every time the hands are washed, the line of skin which grows round the base of the nail should be pressed down gently with a soft towel, or with an ivory or tortoiseshell nail-cleaner. This will prevent it from growing close to the nail and hiding the little half-moon at the base. The nails should never be scraped or cleaned with any sharp or pointed instrument, and the loose skin also should never be cut away, or it will be apt to become cracked, and will then be very sore. If the nails are stained, a little lemon-juice rubbed over them will do much to improve them. Should they still look rough, and not as glossy as they should do, a small quantity of vaseline or beeswax may be rubbed over them, and they should then be briskly polished with a soft towel.

It must be remembered that the counsel given here will be of little use unless it be followed out regularly. No good effect can possibly be gained by the use of a wash or emollient daily for a week, if at the end of that time it is neglected for three or four. This plan of procedure is merely so much waste of time and of good materials, and is worse than useless.

HOME-MADE CAKES AND BREAD.

IN the present day home-made cakes, as well as home-made bread, are not nearly so common as they were half a century ago. The reason of this is that the tendency of the age is more and more in the direction of having nearly all things made in a wholesale manner. Small shops are gradually being swamped by huge establishments known as stores. In fact, gradually the tendency of society in England is to become more American and more French, or perhaps it would be better described by saying that the tendency of society in London is to be more cosmopolitan. Large buildings are rearing their lofty heads around us, which are let out in flats, where one boiler supplies the whole establishment with hot water. These buildings are now built to meet the requirements not only of the rich but of the poor.

There is no doubt that the ordinary English life, even of the poor, is excessively wasteful. Let us, for instance, take a large lodging-house which is rented by twenty poor families, occupying, say, two or three rooms each. Suppose we take as an instance the Sunday dinner, which is generally served between one and two. These twenty families require a certain amount of food cooked, which would probably be well done with one good large stove superintended by, say, two cooks. As it is, in our present state of society, it requires twenty cooking-stoves, even on a hot summer's day in August. It also occupies the time of twenty women, all of whom, or nearly all, probably waste a considerable amount of food, owing to incompetency. The washing-up is badly performed by twenty persons, who probably depend upon twenty tea-kettles. In France these twenty families would probably all dine out, and get a well-cooked dinner for considerably less money than is expended at home on buying the material; and on this latter system there is absolutely no waste at all.

It may be wondered by some what all this has got to do with home-made cakes, home-made bread, home-made jam, and home-made pickles. The point we wish to illustrate is this—that as a rule there is no “saving” in having any of these articles made at home. The exception to the rule is where there is a garden which supplies material for jam and pickles, and also where there are young ladies in the house, and it is desirable to find some work “for idle hands to do.” Very often mistresses of households do not grasp the fact, that *time is money*. For instance, suppose we insist upon having our bread made at home as well as our cakes, and also that we buy our fruit and vegetables for the purpose of making jam and pickles. Unless this work is performed by members of the household who would

otherwise be idle, so far from a saving, there is a loss. From the point of view of political economy, as well as domestic economy, the whole nation would be richer were we to live more like people do abroad.

With regard to cakes, it is impossible to make them at home as cheaply as they are made at enormous establishments where they are turned out weekly by hundreds of tons. So, too, with biscuits and bread. With regard to jams, the same holds good. If you buy your oranges and sugar, and take into consideration the cost of firing and the value of labour, you will find it impossible to make orange marmalade at a cost of 2½d. per pound, which is about the price it is sold at wholesale; and should you attempt the operation, and compare it with the marmalade made by machinery, the difference in appearance would be almost equal to that which would exist between a sheet sent home from the linen-draper's, and a homespun material made from the old-fashioned spinning-wheel.

A few introductory remarks of this description are necessary, in order that the mind may be disabused of the idea of making these things at home on the ground of “economy.” We live in an age of machinery, with which it is utterly impossible to compete. Were the custom of making our bread at home universal, bakers' shops would cease to exist, but the waste of labour to the country at large would be enormous. What is required in the country now is more *co-operation* in the methods of preparing food. We have soup-kitchens for the poor, why not soup-kitchens for the rich? Take a street in London containing a hundred houses, the rent of each of which is £200 a year. What an enormous saving it would be if those two hundred houses could have a stock-pot between them! We should probably have an infinitely better stock for a tenth of the cost. Instead, we have two hundred stock-pots, and two hundred women to look after them.

Cakes.—Cakes, then, are very *nice* when home-made, but probably can be obtained *cheaper* ready-made. Still, at times we all like a change; and there is no more instructive amusement in cooking for young ladies, than for them to occupy themselves in making a cake.

We have before reminded the reader that this is not a cookery book, and our space is too limited to attempt to give a lot of recipes for making every kind of cake. Indeed, cakes vary so much that it may be said of them their name is legion. Should you wish to exhaust the subject of cakes, “*Cassell's Dictionary of Cookery*,” which is the most

comprehensive work on the subject ever written, will give you a choice out of 164 different kinds. We can attempt nothing at all of the sort here. In making cakes there are, however, general principles to be borne in mind. The first of these is the state in which the materials used for making the cakes are found. Roughly speaking, these are flour, water, sugar, butter, eggs, currants, various kinds of candied fruits, almonds, &c. &c.

The elements of a cake are butter, flour, and eggs, and here our difficulties commence. We will pick up the cookery book, and see what it says:—"Take half a pound of butter and beat it to a cream." What does this mean? We have been informed by some wise persons that if we wish to beat butter to a cream, we must stir it in a bowl in the contrary way to which the cream was beaten in order to make it into butter! These directions recall the famous American sausage machine, in which the pigs were driven in at one end, whereupon, the machinery being set in motion, they emerged at the other end in the form of pork sausages. So perfect was this machine, however, it could be reversed; and a competent person, after tasting the sausages, if he found them deficient in flavour, had them all put back, when, by reversing the machinery, in a few minutes the pigs trotted back again to their styes. But, setting aside all this nonsense, in order to beat butter to a cream it must be placed in a strong basin, and then beaten with a fork or spoon. A wooden fork or spoon is best. After knocking it about and smoothing it against the sides of the basin, it gradually loses the consistency of butter and becomes of the consistency of cream, though thicker. In this state it is much easier to work in, to make cakes, than if it remained as ordinary butter, besides which we can pour off a sort of milky water that will be knocked out of it.

Another important ingredient is the flour. The chief point here to be borne in mind is to have the flour dry, and free from lumps. In wet, damp weather flour gets very moist, and it is an important point for consideration in kitchens, the state of the cupboard in which the flour is kept. Flour is not so easily dried as some people think. It is a work of time, and the flour wants moving about. After flour has been well dried, it is best sifted. By this means all danger of lumps is avoided; sometimes, too, these lumps are mildewy, which would spoil the cake and bread were they used.

Currants require care. When they are fresh sent home from the grocer's, they are often clammy. They need washing, drying, and picking. This, again, is a work of time, and cannot be done in a hurry. It is always best to wash the currants as soon as they come from the grocer's, then to have them

dried, after which they can be put by for use. They should be washed in cold water, spread out to dry in a very cool oven or in front of the fire, and, as much as possible, separated from one another. You cannot dry currants properly when they are all together in a lump. Picking the currants is also a work of time. You will often find extraneous matter, so to speak, mixed with the currants; while those small sharp stalks which adhere to them are extremely disagreeable when they get into the cake, especially if you have a hollow tooth.

Eggs.—Most cakes—indeed, we might almost say all cakes—require eggs. These also want care. New-laid eggs are not necessary, and indeed it is *not* desirable that they should be absolutely new-laid, inasmuch as the whites of fresh-laid eggs, when boiled, do not coagulate, but rather turn what may be termed milky. Now when eggs are used for the purpose of binding materials together, they should be in that state that when boiled they become hard and firm. Good shop eggs are all that are necessary for cakes. On the other hand, there is a limit as to how far eggs should be allowed to get stale. In London, the poorer class of bakers buy up what are called "spot-eggs." You will probably know that many "old house-wives" among the poor buy their eggs at night-time, and hold them up in front of a gas-light, in order to see if they are good. If the eggs are perfectly clear, they will accept them; but if, on being held in front of a strong light, you can detect a black spot, this shows the egg is bad—or, at any rate, this black spot is what we may term the nucleus of a bad egg. Remember that it is always impossible to draw any exact line between any article of food being perfectly fresh, and putrid. You may shoot a partridge to-day, and at the end of six weeks it will be a mass of corruption, but it would be impossible to say at what precise moment it became bad. At no particular period in its history could it be said that it was fit to eat at 8 o'clock, and unfit to eat at five minutes past. So, too, with eggs. It is, as we have said before, a sad reflection that every egg was *once* new-laid; but such is the case. This black spot is the turning-point. These "spot-eggs" are bought up by bakers very cheap—indeed, they would obtain three spot-eggs for one fresh. They break them very carefully, and pour in every part of the egg except the black spot and its surroundings, which is of course thrown away. In fact, an egg in this state corresponds to a leg of mutton in that doubtful stage, in which the lean is all right, but you have to leave the fat. It is as well for housekeepers to know these facts, for we are all aware that there is a stage at which every egg will arrive, if not eaten, when it would be unfit to

be boiled for breakfast, but would do for "cooking purposes."

Another important point in the manipulation of eggs is breaking them. Very often we have to beat the whites separate from the yolks; but it is not every cook—or, at any rate, every amateur cook—who knows how to do this neatly. It requires some address. We have an old saying that "there is reason in the roasting of eggs." Equally true is it that there is reason in the breaking of eggs. In the first place, it is obvious that each egg should be broken *separately*, in order to avoid the possibility of a bad egg spoiling the lot. One black sheep will often contaminate a flock. This is often found true in girls' schools; and the same applies to eggs. Nothing will overcome the addition of one bad egg, notwithstanding the quantity to which it is added. To break eggs so as to separate the yolks from the whites requires a certain amount of decision of character. More mistakes are made from being too gentle than too firm. It wants a smart and decided tap on the narrow edge of a tea-cup or basin. A very timid girl might fail, and not be successful till she had lost her temper. The moment the egg is broken in half—or, rather, broken through on one side—the two halves must be separated as if they opened on a hinge at the back, and you must hold two little cups, consisting of half of the egg, in each hand. One of these halves ought to contain the yolk unbroken, while a considerable quantity of the white of the egg will flow over in a thick lumpy stream. You must then pass the yolk from one half-shell to the other, backwards and forwards, and, in so doing, purposely spill as much as possible of the white, till nothing but the yolk is left. The whites are of course placed together in one basin, and the yolks in another.

Next, we often have to whisk these whites till they become a stiff froth. Little machines are made for this purpose, but nothing is equal to a whisk. This whisk is made of stiff tin, but perhaps the best whisk of all is an imitation birch-rod, made of twigs very similar to those exhibited on the pictures in which the old lady who lived in her shoe is depicted chasing her brats for the purpose of chastisement. The basin in which the whites are whisked to a stiff foam must be large and solid.

These few words on the subject of eggs are of course only necessary to those who enter upon the subject of cakes as a starting-point in their cooking career; and there are probably many ladies who are now famed for their excellency in all matters connected with the subject of cooking, who, if they cast their minds back some twenty years or more, will remember that their first essay in this branch of the high arts was a home-made cake, and will recall

their feeling of pride and satisfaction at the success of this, their first attempt. Probably now they will watch, with equal satisfaction, the first attempt of their own daughters, in much the same spirit that a dog will watch a puppy kill its first rat, as in the well-known picture "His First Attempt."

Another point is the sugar. When white sugar is used, it must be thoroughly pounded, and then sifted. Without this you cannot be certain that there are no lumps.

Dryness.—The chief difficulty that beginners experience in making a cake is that it is apt to be heavy; and the chief cause of its heaviness is—the ingredients were too moist. You should always remember that the heat of the fire—at any rate, at first—increases the moisture. Currants may look perfectly dry, but were you to put them in a jar, and place the jar in the oven, you would very soon find that they became moist. Sugar is perfectly dry, but after it is exposed to heat it not merely becomes moist, but absolutely melts. Probably, all of you have, at some period or other in your lives, assisted at the solemnity of stirring the Christmas pudding. This is an event in many households, and even the baby has been known to be lifted up, and its little chubby fist made to grasp the handle of the wooden spoon, although too young to understand the future joy in store, at the preparations for which it is assisting. You will now remember how this pudding became more and more moist the more it was mixed. The same general principle applies to cakes. They require a great amount of mixing; and the more fruit they contain, the greater the necessity.

Baking.—Cakes have to be baked in a tin or hoop. Of the two the hoop is the more preferable. These hoops require lining with two or three layers of well-buttered paper. Without this buttered paper the cake is apt to stick to the tin. First-class French cooks use hoops made on purpose, of stiff cardboard, stitched together at the join with needle and cotton, the join being pasted over with fresh paper on either side to make it more secure. In turning out a cake from a hoop or tin, there is a danger of the cake breaking. In the first place, after the cake is baked, it is very important to know when it is done. For this purpose the test is—not to stick in a fork, as hasty amateurs do, since the fork, if the cake is not done in the centre, is apt to break the exterior part that is done—but take the trouble to stick in a thin wooden skewer; and if the skewer comes out as clean as when it went in, the cake is done; but if, on the contrary, the skewer comes out in the least degree sticky, the cake is not done, and requires longer baking. It is a very common thing to find cakes—

and especially plum-cakes—too black on the top, although all the rest of the cake is perfect. If the cake is a large one, it requires what we may term a steady oven; and as soon as the cake is set at the top, it is sometimes advisable to cover it over with a sheet of buttered paper. This will keep it from blackening. Very small cakes require a brisk oven; large cakes, as we have said, a steady oven. Of course it is obvious that if a large cake be baked in a stiff cardboard hoop, a great deal of danger is avoided by cutting the strings of the hoop. It is supposed that cakes, after they are baked, are best placed on their sides to get dry, thereby being rendered less heavy.

Kinds of Cakes.—Some cakes are made from dough, others are made with German yeast, others, again, are assisted by the addition of baking-powder, while some very first-class cakes can be made without the help of any of these ingredients. All cakes require the addition of a little salt, varying from a pinch upwards. Of course, cakes may be divided into classes in another way. There is the plain cake, known as *Brioche*; and there is the other extreme, the rich wedding-cake, which should be made many months before it is wanted. The *Brioche* depends for its excellency on its lightness and its sweet simplicity, without being too sweet. The wedding-cake chiefly depends upon seeing how much fruit and candied peel can be crowded into as small a space as possible: and as these are two distinct classes, we will as briefly as possible describe how to make first one and then the other. The *Brioche* is the sort of cake that would be expected from a first-class French cook; the wedding-cake is English to the back-bone, and would, as a rule, be twice as nice if it cost half the money to make.

The ingredients for making *Brioche* cake are as follows:—A pound of flour, three-quarters of a pound of eggs (seven or eight eggs will generally go to the pound, but for practical purposes seven large or eight small would be sufficient; we shall therefore require six), ten ounces of butter, about half an ounce of German yeast, a teaspoonful of salt, and a dessertspoonful of powdered sugar. You first of all take about a quarter of the flour, and make a well in the centre—of course placing it on a marble slab. You dissolve the yeast in a little warm water, set it in the well, and then gradually add sufficient water to form the whole into a sort of paste, exactly the same as if you were making ordinary pie-paste. Having kneaded it all thoroughly together, you roll it into a ball, and then put this ball by in some warm place to rise. Those of you who understand bread-making will grasp the idea when you hear that this ball is called sponge, and the sponge is put by to

rise, exactly in the same way that every baker leaves his sponge to rise. Those of you who do not understand bread-making will perhaps take in the idea by watching this ball after it has been left for some time in a warm place. (In summer-time a hot kitchen is sufficiently warm.) Owing to the fermentation of the yeast, the round ball will gradually begin to swell, and grow larger and larger, until it has increased to quite three times its original bulk.

But in the meantime we must go back to the other materials. Taking the remainder of the flour, place it in the middle of the paste-board—or, still better, marble slab—and again make a well in the middle of the flour. The salt and sugar should be dissolved in a little water. Add the butter and the six eggs, and gradually mix the whole together. It is best mixed with the fingers, and there is no fear of being too heavy-fisted, as the lightness of the cake depends upon the sponge that is rising. When thoroughly mixed, the sponge should be added to it, and the two kneaded together. This kneading must be more gentle, but still it is important that the two are mixed together completely. It is then best put by in a basin, which should be floured, till the next day. This basin must be left in a cool place. The next morning it must be mixed together again, and once more put by for an hour or two in a cool place. This may be done twice, and at the finish the cake should be elastic, and apparently full of little tiny air-bubbles. It is then ready for baking. It should be pressed down in the hoop with the hands, and it is generally best to treat the top of the cake in the same way that you would a meat-pie—i.e., egg it over with some beaten-up egg and a paste-brush. A cake such as this will take about an hour and a half to bake. It will, of course, rise very considerably, owing to the yeast. As soon as the top of the cake begins to turn colour, it is best to cover it at once with a sheet of buttered paper, as, being light and dry, it is very apt to burn.

This is the best kind of cake for all descriptions of sweets where cake is one of the bases employed in forming the dish. This sort of cake is best for making that class of dishes known as *gâteau au rhum*. This paste can be pressed into small tins or moulds, leaving plenty of room for the cake to swell. An immense variety of very delicious cakes can be made by mixing different kinds of candied fruits in with the paste, such as citron, preserved cherries, candied peel, preserved pine-apple (candied); but perhaps of all cakes, there is nothing so nice as mixing in some candied angelica, cut up in little pieces that have been soaked in rum and sugar. A cake of this description is, in the estimation of most real epicures who are worthy of the name, infinitely superior to all the heavy rich cake in the

world, even if sufficient fruit could be crowded into it to make it worth a guinea a pound.

Plum-Cake.—How different from this is the heavy wedding-cake which is typical of plum-cakes in general! We will give the recipe, so far as ingredients are concerned, for a first-class plum-cake, recommended by the famous cook Francatelli. They are as follows:—One pound and a half of flour; one pound and a half of butter; one pound of fine sugar; one pound of dried cherries, slightly chopped; one pound and a half of currants; one pound and a half of candied orange, lemon, and citron peel in equal quantities (all these must be cut in small shreds); eight ounces of ground or powdered almonds; eight whole eggs; the zeste or rind of four oranges (this means rubbed on a piece of sugar and afterwards scraped off); half an ounce of ground spice, consisting of cinnamon, cloves, and nutmegs mixed in equal proportions; half a pint of good brandy; and a teaspoonful of salt. These are the ingredients, and Francatelli, who thoroughly understood the old-fashioned English taste, has evidently a desire to make the cake as rich as possible.

The way in which you should proceed to make a cake with the ingredients mentioned, is as follows:—You must get a large pan, glazed white inside, and you commence proceedings by first of all, with a wooden spoon, beating the butter to a cream. Then you must sift in by degrees the flour, the sugar, and add the eggs; the whole will form a sort of batter, which should be well worked the whole time. When you think this batter is perfectly mixed, and not before, add by degrees the whole of the remaining ingredients, viz., the ground almonds, candied peel, the cherries, currants, spices, brandy, and salt. These can be mixed, and, as we have said, added to the batter gradually. The end in view is to have every part of the cake alike, and this end cannot be obtained if you add quantities in lumps. Directly this end is achieved, the whole should be poured into a hoop, placed on a baking sheet. This hoop must be lined with two or three bands of well-buttered paper, while two or three sheets of paper, similarly treated, must also be placed underneath the cake.

The cake must then be put into a steady oven. It is very important that this oven should be really steady; consequently, a cake of this description cannot be baked at all in a little oven, where one side is hotter than the other. In fact, a large cake like this requires either a baker's oven, or a stove usually met with in a really large establishment. The time to bake a cake such as this would be from three to four hours. The top of the cake should of course be well covered over, to keep it from getting too

blackened. We have already described how to make the almond paste which is usually placed at the top, and then the icing.

This cake may be considered the limit in the direction of richness, and we can descend gradually till we reach the limit of plainness of a so-called school cake, which, when cut, has the appearance of a slightly yellow loaf of bread in which a few currants may be detected in the attitude of what school-boys call "hollo-ing" to one another. A few remarks on the decline from richness to plainness will probably illustrate this subject better than a long series of recipes; in fact, all cooks can make the recipes for themselves, while an admirable cake, and an economic one as well, can often be made by using up the odds and ends or remnants in the store cupboard.

For instance, suppose you have some currants left over, as well as bits of candied peel (spices are generally kept in quantity). The first point we may notice in our descent in the direction of the plain cake, is the substitution of sultana raisins for dried cherries. We had occasion to call attention to the same principle of cookery in speaking of cabinet puddings. Those who wish to learn cooking as an art, must endeavour to grasp these principles. There are some cooks who, in making a cake, would feel helpless if even one, or a part of one, of the ingredients were left out; in fact, they live by rule and not by reason; and in cases of difficulty, only those who have studied the principles of cookery are capable of rising to the occasion. Of course this may be burlesqued, as has been done by Sam Weller, who remarks, "Necessity is the mother of invention, as the cook said when she took her night-cap for a pudding-bag." It is always well now and then to have a look round, and a very nice home-made cake will often turn out far better than might have been expected by striking out with a few novelties. For instance, say we have got some currants and some sultana raisins, but not quite enough. Now suppose the very common case indeed of the side-board containing the remains of a dish of almonds and raisins. (This is, of course, a very uncommon occurrence where there is a family of very small children!) You can use them up as follows:—Blanche the almonds (you will remember that this is done by throwing them into boiling water, and then by rubbing off the skin with the fingers, and throwing them into cold water for a little while to prevent their turning colour; although, in the case of making a cake, this precaution would not be necessary). There is no occasion to weigh the ingredients—the limit, remember, would be half a pound of almonds to a cake composed of a pound and a half of what may be termed the essential ingredients, such as flour and butter and eggs. The raisins, of course,

would have to be stoned. Again, suppose there is a lack of fruit: a dessertspoonful of good old-fashioned black treacle will often have the effect of increasing the cake in both richness and appearance. It is, of course, a make-shift, but then it is the knowledge of how to make "make-shifts" that constitutes the real cook or *artiste*. Mons. Burlet, formerly *chef* at the Reform Club and at the Freemasons' Tavern, was once summoned to prepare a dinner for the Lord Mayor on the occasion of the opening of a new establishment at a very fashionable watering-place in the North of England. As is not uncommonly the case on an opening day, many essentials in the kitchen had been overlooked, and he was compelled to make the turtle soup in a zinc foot-bath, and thus the world was saved the shock which would have been experienced, had it known that the Lord Mayor of London had dined without turtle.

There are various other ingredients that are introduced into cakes, besides those we have mentioned. Some persons use ordinary lemon-peel. When raw lemon-peel is introduced, it should be cut very thin indeed, and the white part left out altogether, as it fails to impart a lemon flavour in itself, but never of communicating a bitter one. By far the better plan is to use what we must mention over and over again, *viz.*, zeste of lemon or zeste of orange. It is wonderful, in making a plain cake, how great an improvement is made by rubbing some lumps of sugar on the outside of an orange, and then using these to flavour the cake. One great advantage of this method of flavouring is that it costs absolutely nothing beyond, of course, the value of the sugar, which would have to be put into the cake in any case. The oranges are none the worse for having their outer coat taken off by these means, the only result being that they look a trifle paler in colour, and they get somewhat softer from being pulled about and pressed with the fingers; but this renders them all the better for eating purposes. In making a pound cake, which is very similar to *Brioche*, and which, as the name implies, consists of a pound of everything—*viz.*, a pound of butter, one pound of flour, and a pound of eggs (eight eggs generally go to a pound)—rubbing the sugar on the outside of an orange or lemon is a very great improvement in the flavour of the cake, as without some flavouring the cake is apt to be insipid. On the other hand, care must be taken not to over-do it. We do not want an orange cake or a lemon cake, but sufficient flavour of either of the two to give the cake a "tone"—in fact, you must proceed on the principle that a man does when he places lemon in a glass of hot whisky-and-water.

Another class of cakes, which may be called a

type of their own, is a seed-cake made with dripping. A very good way of making a plain cake, is to take six ounces of perfectly fresh dripping and mix it with a pound of flour. The only way to mix it properly is to rub the two together with the fingers. If the dripping has never had any salt with it, it is best to put in a little. To this may be added a teaspoonful of mixed spice, about six ounces of sugar, and a tablespoonful of caraway seeds, which give their name to the cake. These dry materials should be mixed thoroughly together before being added to the dripping and flour, as they are much more easily managed in the dry state than in the moist.

Lightness.—In the recipe now given, and which is a very old one, we are recommended to dissolve a teaspoonful of carbonate of soda in half a pint of milk, and then to add a teaspoonful of vinegar, and then put the mixture into a buttered hoop or tin, and bake in the oven for about an hour, when the cake will be done. Of course if a hoop were to be used, it must have the usual accompaniment of a buttered paper. This is a simple recipe, but *why* do we use the carbonate of soda and the vinegar? Because, when an acid is mixed with the carbonate, it forms a gas known as carbonic-acid gas. This gas forms bubbles, and these bubbles cause the cake to rise; and this explains in intelligible terms the meaning of baking-powder, as may be illustrated by an anecdote of the late king of the Cannibal Islands. After a wreck, the medicine chest was washed ashore, and was carried in triumph to the feet of His Majesty. Among other things that particularly attracted his attention was a box of Seidlitz powders. His Majesty regarded the box with royal dignity, and, having thought the subject carefully over in his mind, slowly and solemnly swallowed the contents of all the blue papers with, at present, but little result. He afterwards, with equal dignity, swallowed the contents of the white papers—the result was too awful to contemplate! Baking-powder corresponds very much with a blue and white packet of effervescing powder mixed together in a dry state. If you add half a pint of water, it makes a fizz: in other words, an enormous amount of bubbles. Now, if you mix a powder of this description in a cake, wherever these two powders come in contact with moisture together, a little bubble is formed, and consequently the cake is light.

To illustrate another way of making cakes light, we will mention the case of a seed-cake made from dough. Take a quartern of dough left from making bread. If procured from the baker's, set it in a basin, covered with a cloth, before the fire to rise.

Beat half a pound of butter to cream, or use an equal quantity of dripping; work this into the dough, and add three-quarters of a pound of moist sugar, an ounce of caraway seeds, and a well-beaten egg. Knead the dough well; put it into one large or two moderate sized buttered baking-tins, let it stand before the fire to rise, and bake in a well-heated oven. Time, about two hours for one cake. Here the principle is just the same. The yeast gives off the same gas we have been talking about.

Another method of making cakes light is due to the fact that you beat the whites of the eggs to a stiff froth. Now these really are *air-bubbles*, but hot air takes up an enormous amount of room in comparison with the same quantity of cold air. If you twist a paper-bag half full of air, gum the edges tight, and place this paper-bag in a very hot oven, it will fill as if it were going to burst—and, if the paper is thin, it will burst. A fire-balloon goes up in the air because the heated air takes up such a very large space compared to cold air that it becomes much lighter, and consequently floats, notwithstanding the weight of the paper-bag and piece of spongo dipped in spirits of wine which caused the heat. When the whipped white of egg is mixed cold with the cake, the little bubbles may not be bigger than a pin's point; but when heated in the oven, these swell considerably, and the cake will rise in the tin like a *soufflé*, only, of course, not to so great a degree.

In concluding the subject of cakes, a few general directions may not be out of place, even if partly a repetition of what has already been said. First, it is important that the dry materials, such as flour, currants, &c., should be *really* dry. The flour should be sifted after being dried, and then weighed; so, too, with the currants. It is always best to have these washed and dried at the starting. The dry materials mix easily *when* dry, but are mixed with difficulty if damp and sticky; and one great secret of success in cake-making is that the materials should be thoroughly mixed. To illustrate this point, just contrast the ease with which you can mix a quart of dry corn and a quart of sticky currants. Butter is best put in cold water before it is used; and if it is salt butter, it is best to squeeze it with the fingers, and work it well in cold water, using two or three waters, before mixing in. By this means you get rid of a good deal of the salt. It can afterwards be beaten in this way to a cream. The usual care, of course, must be taken with the eggs; but this has already been described.

Almonds.—When almonds are pounded, a few drops of cold water should be added to them while pounding, as they are apt sometimes to what is called

“oil.” Some persons add white of egg to the almonds, others rose-water, but for all practical purposes cold water is amply sufficient. Directions have already been given for putting almond paste over a cake, and also for icing a cake; but almonds are often used in a chopped state for covering cake. We refer to Genoa cake. The cake must be baked first, and then brushed over with something sticky. Sugar coloured with caramel will do very well for the purpose, but great care should be taken that the almonds are perfectly white and dry before they are sprinkled over the cake. The almonds must be quite cold before they are chopped, and should be sprinkled over the top of the cake directly the chopping is complete; otherwise, if left too long, they turn brown. The cake, too, should be put into a very slack oven indeed, and only for a very short time, after the almonds have been sprinkled over the top.

There is a modern cake that has only recently made its appearance in pastry-cooks' windows, which consists of a white base, something like the so-called Madeira cakes, but containing bright-coloured fruit. This cake is easily made, and is simply what it appears to be—preserved fruit cut up in rather large pieces, and mixed with an ordinary pound cake. It has a very handsome appearance, and is well worth an experiment. Suppose, for instance, we take some crystallised fruits—and we might pick out crystallised apricots, which are very yellow; crystallised almonds, which are very green, or crystallised figs, which will answer the same purpose; and to these, by way of a red colour, we can add crystallised cherries, raspberries, and strawberries. These fruits do not require chopping, but, rather, cutting up in small pieces about the size of half a cherry. These, simply mixed up in a pound cake, cause a very handsome appearance indeed when the cake is cut up in small slices. A small cake made this way, which is cut into thin slices and mixed with other cakes, besides fancy biscuits, gives a marvellous tone to a mixed dish served on occasion, and known as “light refreshments.”

Bread.—With regard to bread, when home-made, a great deal depends upon the quality of the flour used. Of course, flour differs immensely, and as a great part of our flour comes from abroad, we cannot always depend upon having it of one uniform quality. High-class rolls are made by using what is known as Vienna flour. This, however, is more expensive than the ordinary flour used by English bakers. The most famous flour probably in the world is made from the corn grown in the neighbourhood of Naples. It is very white and very fine, and from it is made the famous macaroni and vermicelli. In making bread we do not think you can do

better than follow the directions (written by an American lady) which we here reprint from "Cassell's Shilling Cookery":—

"A lady who is very proud of her table, and justly so, said to me quite lately, 'I cannot understand how it is we never have really fine home-made bread. I have tried many recipes, following them closely, but I can't achieve anything but a common-place loaf with a thick hard crust; and as for rolls, they are my despair. I have wasted eggs, butter, and patience so often that I have determined to give them up; but a fine loaf I will try for.'

"'And when you achieve the fine loaf you may revel in home-made rolls,' I answered."

"And so I advise everyone first to make perfect bread—light, white, crisp, and thin-crust, that rarest thing in home-made bread.

"I have read over many recipes for bread, and am convinced that where the time allowed for rising is specified, it is invariably *too short*. One standard book directs you to leave your sponge two hours, and the bread, when made up, a quarter of an hour. This recipe, strictly followed, must result in heavy dough bread. As bread is so important, and so many fail, I will give my own method from beginning to end; not that there are not numberless good recipes, but simply because they frequently need adapting to circumstances; and altering a *recipe* is one of the things a tyro fears to do.

"I make a sponge overnight, using a dried yeast cake soaked in a pint of warm water, to which I add a spoonful of salt, and, if the weather is warm, as much soda as will lie on a threepenny-piece. Make this into a stiff batter with flour; it may take a quart or less. Flour varies so much, to give a rule is impossible; but if, after standing, the sponge has a watery appearance, make it thicker by sprinkling in more flour; beat hard a few minutes, and cover with a cloth. In winter keep a piece of thick flannel for the purpose, as a chill is fatal to your sponge, and set it in a warm place free from draughts. The next morning, when the sponge is quite light—that is to say, at least twice the bulk it was—and like a honeycomb, take two quarts of flour, more or less as you require, but I recommend at first a small baking, and this will make three small loaves. In winter flour should be dried and warmed. Put it in your mixing-bowl, and turn the sponge into a hole in the centre. Have ready some water, rather more than luke-warm, but not hot. Add it gradually, stirring your flour into the sponge at the same time. The great fault in making bread is getting the dough too stiff; it should be as soft as possible, without being at all sticky or wet. Now knead it with both hands from all sides into the centre: keep

this motion, occasionally dipping your hands in the flour if the dough sticks, but do not add more flour unless the paste sticks very much. If you have the right consistency, it will be a smooth mass, very soft to the touch, yet not sticky; but this may not be attained at a first mixing without adding flour by degrees.

"When you have kneaded the dough until it leaves the bowl all round, set it in a warm place to rise. When it is well risen, and feels very soft and warm to the touch, and is twice its bulk, knead it once more thoroughly, then put it in tins either floured, and the flour not adhering shaken out, or buttered, putting in each a piece of dough half the size you intend your loaf to be. Now, everything depends on your oven. Many people bake their bread slowly, leaving it in the oven a long time, and this causes a thick hard crust. When baked in a modern iron oven, quick baking is necessary. Let the oven be quite hot, then put a little ball of paste in, and if it browns palely in seven to ten minutes, it is about right; if it burns, it is too hot, open the damper ten minutes. Your bread, after it is in the tins, will rise much more quickly than the first time. Let it get light, but not too light—twice its bulk is a good rule—but if it is light before your oven is ready, and thus in danger of getting too porous, work it down with your hand—it will not harm it, although it is better so to manage that the oven waits for the bread rather than the bread for the oven. A small loaf—and by all means make them small, until you have gained experience—will not take more than three-quarters of an hour to bake. When a nice yellow-brown, take it out, turn it out of the tin into a cloth, and tap the bottom. If it is crisp, and smells cooked, the loaf is done. Once the bottom is browned, it need remain no longer. Should that, however, from fault of your oven, be not brown, but soft and white, you must put it back in the oven the bottom upwards. An oven that does not bake at the bottom will, however, be likely to spoil your bread. It is sometimes caused by a careless servant leaving a collection of ashes underneath it. Satisfy yourself that all the flues are perfectly clean and clear before beginning to bake, and if it still refuses to do its duty, change it, for you will have nothing but loss and vexation of spirit while you have it in use.

"I think you will find this bread white, evenly porous (not with small holes in one part and caverns in another; if it is so, you have made your dough too stiff, and it is not sufficiently kneaded), and with a thin crisp crust. Bread will surely fail to rise at all if you have scalded the yeast. The water must never be too hot. If it gets chilled, it will only rise slowly, or not at all; and in using

baker's or German yeast, take care that it is not stale, which will cause heavy, irregular bread. In making bread with compressed yeast, proceed in exactly the same way, excepting that the sponge will not need to set over-night, unless you want to bake very early.

Rolls. — "If you have once produced bread to your satisfaction, you will find no difficulty in making rolls. Proceed, as follows:—Take a piece of dough from your baking. After it has once risen to a piece as large as a man's fist, take a large tablespoonful of butter and a little powdered sugar, work them into the dough, put them into a bowl, cover it, and set it in a warm place to rise—a shelf behind the stove is best. If you make this at the same time as your bread, you will find it takes longer to rise. The butter causes that difference. When very light—much lighter than your bread should be—take your hand and push it down till it is not larger than when you put it in the bowl. Let it rise again, and again push it down, but not so thoroughly. Do this once or twice more, and you have the secret of light rolls. You will find them rise very quickly. After once or twice pushing down, when they have risen the third or fourth time, take a little butter on your hands, and break off small pieces, about the size of a walnut, and roll them round. Either put them on a tin close together, to be broken apart, or an inch or two from each other, in which case work in a little more flour, and cut a cleft on the top, and once more set to rise. Half an hour will be long enough generally, but in this case you must judge for yourself. They sometimes take an hour. If they look swelled very much, and smooth, they will be ready. Have a nice hot oven, and bake for twelve to fifteen minutes. Add a little more sugar to your dough, and an egg; go through the same process. Brush them over with sugar dissolved in milk, and you will have delicious rusks.

"The above is my method of making rolls, and the simplest I know of; but there are numbers of other

recipes given in cookery books, which will be just as good if the exact directions for letting them rise were given. As a test—and every experiment you try will be so much gained in your experience—follow the recipe given for rolls in any good cookery-book. Take part of the dough, and let it rise as therein directed, and bake. Set the other part to rise as I direct, and notice the difference."

Amateur bread-makers must bear in mind that when the loaves of bread are first taken out of the oven—even when that oven is a large baker's one—they will require a certain amount of trimming. Some parts of the loaves will very often get not only too brown, but absolutely black. Rolls, especially, require to be of a uniform colour, and this can only be obtained by using what is known as a bread-rasp. A bread-rasp is something like an ordinary flat-iron, only of course quite light, the bottom of which is roughened like a file. When therefore you trim your loaves, get rid of the black first, and keep these black pieces of burnt bread separate from the brown raspings. In big French kitchens nothing is lost; and we are sorry to say that this black burnt bread is too often used to impart a darker colour to the coffee served, but with this we have nothing to do now. Brown bread-raspings, however, are exceedingly useful, and you should endeavour to get them of a uniform colour.

When the bread or rolls are first taken out of the oven, they *should* look a good deal darker than they do when placed in a baker's window for sale. Of course, to rasp them down to one uniform colour, it is necessary to make the lightest portion of the roll or loaf, on taking them out of the oven, the colour for the whole. These bread-raspings should be put by in a large stoppered bottle, and kept in a dry place. Then suppose you fry a sole, and part of it is of rather too light a colour—sprinkling these fine raspings through the dredger will, so to speak, mend the patch. You will, of course, also remember how necessary these raspings are for sending to table cold boiled bacon and cold hams.

ORNAMENTAL SCREENS.

THE furniture of few rooms is considered complete without a screen of some kind, which, if not arranged in such a position as to shut off the draught from door or windows, is so stood as to form a cosy corner in which to place a couch or comfortable easy-chair. The preference for these screens lies in the direction of Japanese works of art; but as the

cheaper qualities are seldom pleasing in their colouring or design, many people prefer to use a screen that is at least ornamented, if not entirely made, by themselves to suit their own fancy. The word "screen" is a very elastic one, and includes those large three-, four-, or five-fold pieces of furniture, the single-fold screens which stand upon carved wooden

or bamboo legs, and the smaller hand-screens, which can be trimmed in such an infinite variety of ways, and are often converted into work-bags, letter-racks, and wall-pockets.

Palm-leaf Screens.—A palm-leaf hand-screen arranged in a very simple manner, and intended for use as a letter-case, is shown in Fig. 1. Leaves similar to this may be had at as low a price as a penny apiece, but as such cheap ones are too often irregular and crooked, it is better to give a few more pence, and to have one with a straight handle and an evenly-shaped blade. In the illustration the screen is partially covered with lines of fine tinsel cord, which follow the natural folds of the leaf. The letter-pocket itself is made of a piece of plush, lined with silk the same colour, and interlined with stiff net, such as is used in millinery. This is laid on the front of the screen, the edges of the pocket being turned over to the back, and there held down firmly with glue. The plush must be laid over the screen quite smoothly, but must not be stretched so tightly that it draws it out of shape. The back must be covered neatly with silk, to hide the raw edges of the plush. This silk may either be made up over thin cardboard cut the exact size and shape of the blade, or it may be fastened directly to the leaf. The former plan is the better, as the appearance of the silk will not be improved by the marks that will be made in it by the ridges of the screen. A fine cord is taken all round the edges, and the pocket is made more ornamental by a bow of ribbon, with which is apparently fastened a group of peacocks' feathers. The handle is covered first with ribbon, and is then finished with a twist of the same

sort of fancy cord that was used upon the blade of the fan, and a bow of ribbon to correspond with that upon the pocket.

This is only one of the many ways in which these small screens are now made up. Sometimes they are arranged so as to be hung to the wall with the handle uppermost, the pocket being placed across the pointed part of the blade. The pocket looks far prettier when made of full folds of soft silk than when it is of plain plush or velvet. The blade of the screen may also be covered tightly with velvet and bands of ribbon stretched across it, into which letters or stray photographs may be slipped. All these fancy articles owe much of their effect to the skill with which are tied those smart little bows of ribbon used so universally upon them.

An excellent idea is that of using a palm-leaf screen prettily ornamented as a table lamp-shade, and specially valuable would one of these be in an invalid's room, in which, though a light is wanted, it is undesirable that its rays should fall

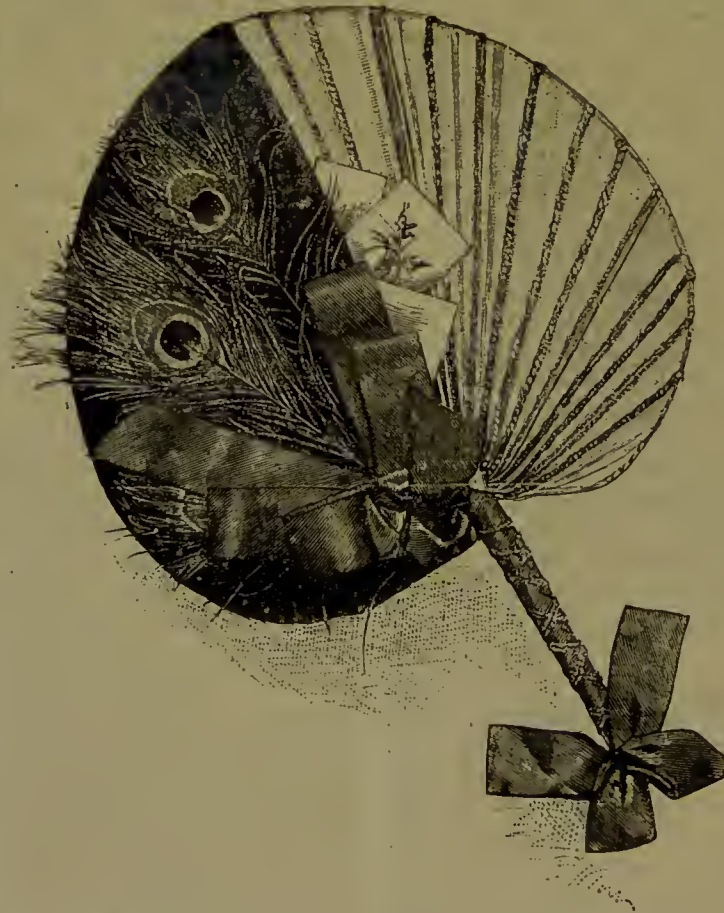


Fig. 1.—PALM-LEAF SCREEN ARRANGED AS A LETTER-CASE.

upon the couch or bed. A well-shaped hand-screen must be chosen, but it is of no consequence whether it is paper or palm, provided that the bamboo handle is quite straight and has no joint in it. The blade of the screen may be made very ornamental by covering it with an effectively-embroidered panel or strip of satin or silk, which can be arranged to slope diagonally across it. Plush or velvet should be placed on each side of the satin to fill up the spaces which are left uncovered. The reverse side, which is turned towards the lamp, need only be covered with plain silk. The stand for the screen may be made in two ways, the first being rather the more satisfactory. Here an ordinary letter-file is required,

the iron spike of which is pushed up the centre of the hollow bamboo handle as far as it will go. If it does not go so high that the base of the screen rests against the wooden part of the file, a portion of the spike must be cut off until it is of the right length. The second kind of stand is made from one of those gigantic reels which are supposed, when new, to have a mile of cotton wound upon them. The hole in the middle will probably be too small to take the bamboo handle of the screen, but it is easily enlarged. Such a reel as this may be glued to the base of the letter-file above mentioned, should the shade be required for a rather tall lamp. The reel or the file, whichever be chosen, will need ornamenting, and may either be covered with plush with a frill of satin, or may be painted, enamelled, or gilded, according to fancy. The ever useful bows of ribbon must not be omitted. The screen may be made semi-transparent, if required, by running a strong wire round the blade of the fan, and then cutting away the greater part of the blade, leaving only the wire and a framework about a quarter of an inch beyond it. This should be covered only with gauze, a pretty effect being given by the use of two or three colours—say, white and yellow, or red, white, and green—one over the other. The wire and the edge of the screen are then hidden beneath a full ribbon ruche or a very narrow band of tiny feathers.

Newspaper holders require two Japanese screens, one being much larger than the other. The handle is cut away from the large one, and the blade is sewn or glued to the back of the smaller screen, so that the one handle is in front, and does duty for both blades. The screens are covered with thin fancy silk, which is arranged in a number of small flat folds. The edges are finished with cord. The two fans are held together at each side with bows of narrow ribbon, which are placed towards the lower part of the blades. That on the left-hand side should be connected with a long piece of ribbon, which is brought across the front of the smaller screen, and is knotted round the handle to form a bow and long ends. The newspapers are slipped in between the two blades, and it is wonderful what a number may be stowed away in a simply-made receptacle such as this.

Thus much for palm-leaf screens, though only a few of the innumerable ways in which they may be turned to account for decorative and useful purposes can be considered here.

Table-Screens for Photographs.—Very useful for the tiny tables now so much in vogue are the small fanciful screens arranged to hold three or five cabinets, or even a larger number of photographs of an ordinary carte-de-visite size.

They are very easily made, but extreme neatness is of the utmost importance, and the screen will not fail to have a home-made and clumsy appearance if all minor matters connected with it are not carefully considered. The favourite material for such tasteful little knicknacks is old brocade, and happy is she who has some of the real old fabric amongst her stores. The foundation of the screen is cardboard, which must neither be so thin that it readily bends, nor so thick as to be difficult to cut cleanly and smoothly.

For a threefold screen six pieces of the card must be cut, each measuring ten inches long by seven wide. Out of the middle of three of these sheets of card, it will be necessary to cut an oblong space, four inches wide and seven inches long, thus leaving a margin all round of about an inch and a half. Choose a piece of self-coloured silk damask for the back of the screen, and lay it wrong side uppermost upon the table. It will have to be twenty-three inches long and eleven inches wide. Take the three solid pieces of card, touch the backs very sparsely with glue, and lay them upon the damask, so that there is exactly half an inch between each card. Turn over the edges of the damask, and glue them down, snipping out a little of the silk at each corner to make them set more flatly. Get about twenty-two inches of thin satin ribbon the colour of the damask, cut this length in half, turn in the ends, and glue the ribbon down between each card. The space left between each card is to form a hinge, and it is very necessary that it should be equally tidy on both sides; hence the strips of ribbon. The whole thing must now be set aside, under pressure, to dry; a soft piece of muslin or linen should be laid over it, and a pile of books placed upon it to weight it.

The cards with the opening in the middle are next covered with the brocade. The material must be cut just half an inch larger all round than the cards, which are glued down to it on the wrong side before the middle is cut out. This cutting-out must be done with great care, leaving the usual half-inch beyond the cardboard edges. The corners of the brocade will require snipping, so that when they are folded over and glued down to the card, they will set quite flat. There is considerable art in doing this neatly; one snip too much of the scissors will cause the brocade to fray in these corners, and one snip too little will prevent it from folding over smoothly. When the material is all glued down, these cards, too, must be allowed to get dry. The rest of the screen is then released from pressure, and the open cards glued upon the top of those fastened to the damask. The glue must be placed upon three sides only,—the reason for this being that, unless the cards are left free at the bottom, the photographs

will not slip in and out when required. The screen must once more be pressed, and, when the glue is perfectly dry, it is complete. Considerable variation may be made by cutting oval or round openings instead of oblong, and by arranging so that the centre panel shall hold two or more cartes-de-visite, instead of cabinets. By simply using much larger cards, and cutting four holes instead of one, a screen may be contrived to hold a dozen photographs, or it may be twofold, and so contain two large ones only. Sometimes the centre panel is made larger than the other two, at others one of the end ones is the largest, that at the other end being the smallest. In such cases as this the top edge of the cards is usually cut into a series of curves, but this makes the covering rather more troublesome.

A quicker way of making such a screen is to cover each card separately, instead of mounting three upon one length of damask as above described, and, when the open cards have been duly glued to the others, to connect them at the top and at the bottom with a strip and bow of narrow ribbon. This, though pretty enough, does not give nearly so professional an appearance as does the first method.

Fireplace Screens.—The problem of how to decorate a disused fireplace effectively in the summer months is often solved, more especially in bedrooms, by standing a small and ornamental four-fold screen in front of it. These are expensive to buy in artistic colourings, but may be made by those possessed of ordinarily skilful fingers during the long and often tedious winter evenings. The necessary materials are very simple. Some sheets of mill-board, four good-sized pictures, either coloured or black and white, or in pairs, glue, some paste, coloured paper or pretty wall-paper, gold paper beading, linen tape, starch or isinglass, and spirit varnish, with brushes for applying them, are required. The board must be first cut into eight panels of the required size. For a medium-sized grate, each panel may be about thirty inches long and twelve wide, and may be curved at the upper edge if preferred. The cardboard is first neatly covered with the coloured paper, and the panels are then laid side by side on the floor or on a table, half an inch apart. A strip of the tape, which should not be less than an inch and a half wide, is then glued down between each panel to make a hinge, the raw edges at each end of the strip being neatly turned over to the wrong side. It will make the screen additionally strong if a second piece of tape be glued over the first one, in such a way that the raw edges of the hinges lie between the two strips. This part of the screen must be put under pressure while the front of the panels is being

prepared. Upon the second set of boards are pasted the pictures, which are cut so as to be about half an inch smaller all round than the panels. Care must be taken to get them to set perfectly flat, without any wrinkles. The edges are then covered with the gold beading, which is gummed on to make a frame round the pictures, carried over the edges of the panel, and fastened down again on the wrong side, thus forming a sort of binding. When these panels in their turn are dry, they must be strongly glued down to the first part of the screen. The pictures are then sized with a thin layer of starch or isinglass, and, when dry, are varnished with spirit varnish.

It is a great improvement to the appearance of the screen if sixteen large-headed pins are procured, one of which is gently insinuated between the two sets of cards at each corner of the panels. Only the ornamental head of the pin should be visible. Many of the huge pins used by ladies to fasten on their hats and bonnets are suitable for this purpose, and, if too long, may easily have an inch or two of their length snapped off. Screens of a smaller size than this need not be made of two sets of panels. The cardboard is covered, as has just been recommended, with coloured paper, the hinges are also hidden beneath a strip of paper, and the pictures are pasted down upon the front of the panels. There is, however, rather more difficulty in getting the pictures to set smoothly when this plan is pursued, owing to the edges of tape and of paper beneath them. It is, therefore, advisable to get a beading with a rather more decided pattern upon it than usual, and to coax all imperfections as near the edges as possible, in order that they may be covered up beneath it.

A pretty round screen for the fire-stove may be simply made of a few yards of good wall-paper and two flat sticks about twenty-one inches long. These must taper very gradually from about two-thirds of their length until a point is formed at the end. They must be painted or enamelled either black or a colour, according to the tint of the paper. About three yards will be needed for a screen of a moderate size. It should be arranged on the table flat, and a border pasted along one edge. This will not only improve the look of the screen, but will also make it stronger at the edges. When dry, the paper must be so placed that the narrow side is towards the worker, and a flat pleat made in it about two inches wide, across its width. The paper is then turned over, and another pleat made exactly on the first one. Turn it again, and fold a third pleat. Continue thus to fold it backwards and forwards, exactly as a paper fan is folded, taking great care that all the pleats are regular. Sufficient paper should be folded to enable the two ends to be brought round in a circle and laid together; but the paper is

likely to tear out unless it is full enough to allow the pleats a considerable amount of "spring." Bore a hole through all the pleats at the end of the fan away from the border, run a ribbon through, and tie it rather loosely, thus forming a circle of ribbon about two inches round. Glue one of the sticks down the edge of the last fold at each end of the paper. They are to serve as a handle by which the fan can be opened and shut, and help to steady the whole arrangement. The fan will require a stand upon which to rest when it is in use. This may be made either of one of the large cotton reels before referred to, or may be made by any turner, and enamelled to suit the colour of the paper. The middle of the fan, where the ribbon was threaded through the pleats, must be filled in with a large full rosette of ribbon, and a bow of the same ribbon added round the sticks. These must be so arranged as to be easily untied when the fan is to be folded up and put away for the winter.

A simpler screen can be arranged somewhat in the same fashion, but here the paper is glued down to a large sheet of millboard cut in the shape of a heart. The top is rather more pointed than usual, the eleft part being considered here as the lower part of the screen. The paper is fastened so that the pleats set upright upon the millboard. The centre, where the pleats meet, is filled up with a good-sized round of cardboard, which is covered with paper, so that it looks like a large button. Should one piece of cardboard be too thin to set well, as many as half a dozen circles may be glued together one above another till a sufficiently substantial one is made. Owing to the thickness of the pleats, this will require to be very firmly pressed down to enable it to adhere securely to them. Two large hooks, made of wire, will serve to fasten the screen to the bars of the grate. They must be held down to the back of the millboard by means of straps of vellum tape, and must be fixed very strongly, as they will have to support the entire weight of the screen, which will be somewhat considerable, owing to the quantity of paper needed to make full and ample pleats.

Ferns and Grasses on Glass Panels.—Other and really elegant screens for concealing a

fireplace in summer are arranged of two sheets of glass, between which are laid fern fronds, autumn leaves, grasses, flowers, and occasionally gaily-tinted butterflies. Those people who love to beautify their homes with specimens of their own handiwork will find with such screens as these that their power stops short when once the ferns have been placed on the glass. The mounting in a bamboo or carved wooden frame must be done by a professional worker, owing, in great measure, to the extreme weight of the glass. The glass must be chosen very good in quality, and any that has the slightest tinge of blue or green across it must be avoided. It must, too, be carefully overlooked, in order that a sheet containing air-bubbles may not be chosen, as these have a disappointing habit of standing out in un-

desirable prominence when laid against the ferns and leaves. The two sheets of glass must be cut exactly the same size, and somewhat of the shape shown in the painted screen in Fig. 3.

The ferns and grasses should be procured

some weeks before the glass, as they will require some time to dry. If the worker has any friends rejoicing in well-stocked conservatories and ferneries, she should beg a few fronds of the more delicate ferns, which can perhaps be cut off where their loss will not injure the general effect. Failing this, let her go to the woods and fields, and lay in a stock of wild ferns and grasses, delicate leaves, and certain flowers. The wild geranium at one time of the year has leaves of an almost rosy hue; so have some potentillas. Asparagus leaves are delicate, and maidenhair of various kinds is generally to be had from the nearest florist. Carrot leaves should not be despised, especially if they have borne a touch or two of early frost. One disadvantage of using flowers is that they are apt to shrivel, and nearly all lose their colour. The common buttercup is one of the best to stand, and the ordinary heather of our commons bears pressure well. The flowers should not be gathered until an hour or so before they are to be used; grasses, too, may be left until the last moment, but should be gathered before they are fully in bloom, or the scales and the pollen will fall off.

The leaves and ferns must be dried and pressed in the usual manner—that is, in a press such as that

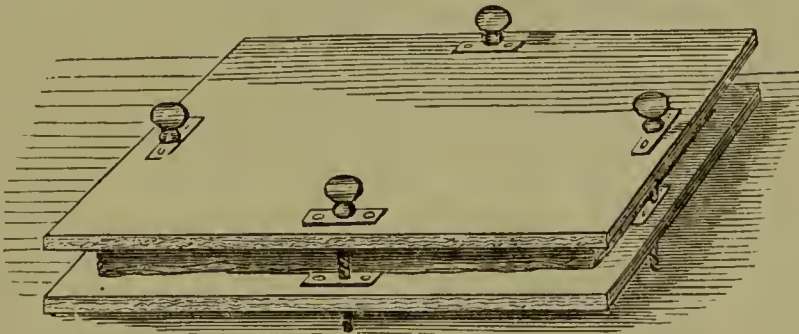


Fig. 2.—PRESS FOR DRYING LEAVES AND FERNS.

shown in Fig. 2. This consists merely of two flat boards, furnished on each of the four sides with strong screws, which can be tightened at will to suit the contents. If this is not to be had, the leaves should be laid between sheets of newspaper or blotting-paper, and left for a day or two under heavy pressure. The papers, after two days, must be changed, as they will probably be found quite damp. The same sheets may be dried by the fire, or in the open air, and will then be ready for use when required. The leaves will dry much more quickly if gathered in bright fine weather, and after a week the papers need be changed only twice a week, then once a week. At the end of three weeks the ferns and leaves will probably be ready for use. Some people advocate the use of a warm iron for drying purposes, the leaves being laid between two or three folds of blotting-paper. Unless this, however, is carefully done, the leaves are apt to turn brown and to become brittle. Flowers, on the other hand, keep their colour better if dried thus quickly with a moderately warm iron than if submitted to the slower process.

When the materials are ready, one of the sheets of glass must be laid upon a white cloth upon a table. The white background will be easier to work upon than a dark one would be. The glass must be absolutely clean upon the side that is uppermost, and should be briskly rubbed with a leather before beginning operations. The arrangement of the leaves is a matter calling for the exercise of great taste; once the two pieces of glass are laid together, no alteration can be made but at the risk of breaking one or both panes in the attempt to separate them. In making a half-wreath, which is more effective than a group, the heavier leaves must be placed at the base; the ferns must curve gracefully upwards on either side of them, the fronds becoming gradually more and more delicate till the top is reached, where the finer grasses are added to complete the tapering appearance of the design. Those leaves that are more highly coloured than others must be placed where they appear most effective, the flowers also standing out in due prominence amongst them. The work must be done, as it were, with bated breath; for, as the leaves are not secured to the glass in any way, a heavy sigh would scatter them all, and the work would have to be begun again, just perhaps as the worker was most pleased with the effect she had obtained. Two, or at most three, brightly-tinted butterflies may be added towards the upper part of the wreath, one being apparently perched on one of the leaves; but it is an unpleasant idea this, of imprisoning seemingly living creatures between two sheets of glass.

The worker must beware of touching the glass

with her fingers, or even of breathing upon it. It is absolutely impossible to clean it when the leaves have been arranged, and greasy finger-marks will spoil the best arrangement in the world. It is always advisable to take up the leaves with a small pair of forceps for this very reason. When the group is as perfect as can be, the leaves all flat and few overlapping, the stems either concealed or arranged at a good angle, the second sheet of glass, of course also polished to perfection, may be gently laid upon the top of the first one. It is well first to coat the edges with a rim of glue or diamond cement, which, however, must not intrude more than a quarter of an inch beyond the edge. The glass must be taken, of course, edgewise, and, as it were, dropped, exactly in position upon the other. This needs a little dexterity, for perhaps two or three of the leaves may become disarranged, whereupon the worker raises the glass to insinuate them, with the point of a knitting-needle, back into their places, and away go half a dozen more, the result being that the "cover" glass must be taken away, and the leaves grouped again. Perhaps, if the worker's eye is true, the glass drops into its place at once. Then all that is necessary is that the two panes shall be pressed together as firmly as possible round the edges, and left under a heavy weight for at least four-and-twenty hours, to enable the cement to become thoroughly set. The outer sides of the glasses are polished, and they are then ready to be mounted.

No doubt a worker will wonder why no cement of any kind is used to fasten the leaves to the glass. She will best obtain her answer by gumming or pasting a leaf to a stray piece of glass, and, when it is dry, she will probably find an ugly smear of cement between the leaf and the glass, which would effectually spoil the look of her screen if all the leaves were to be thus treated.

One of the beauties of this glass and leaf work is that with care it may be made reversible. This may be managed by turning a certain proportion of the leaves underside uppermost—no disadvantage, for this side is often as beautiful as the upper, and, by being lighter in colour, will often lighten the appearance of the group. Many people show much ingenuity in originating designs for arrangements of this kind, and will see at once what different effects may be given by the use of the same materials. A pretty screen may be made by arranging upon the glass spear-shaped leaves, starting from the lower edge and mixed in with grasses; or these same leaves can be used with tall marguerites springing up amongst them. Seaweeds, too, may be utilised in the same way, and are often acceptable, owing to the richness of their colours. Much, however, must depend upon the taste with which they are arranged, and this

is as difficult to describe upon paper as the art of draping materials in graceful curves would be if we were to attempt to give cut-and-dried details of "how it's done."

Embroidered Screens.—In Fig. 3 is given a small fireplace screen, which may be made up with a panel arranged in one of many different styles. In the first place, the panel may be of satin, black or coloured, worked in a style which is suggested by those heavy gold Japanese embroideries with which we are so familiar. A

bold piece of *appliqué* would likewise be suitable, and indeed the very design as given in the illustration would work out well in this manner. The spray of fruit and leaves should be velvet, applied upon a foundation of satin, the fruit being well padded to raise it above the surface of the work; the bird may be embroidered in arrasene. The suggestion of water flowing below should be put in with the brush, and so should the clouds in the background. The whole of the design may be executed with painting if the use of the brush is preferred to that of the needle; but as screens with painted panels will

be treated more fully in a future paper, there is no need to enter into details here. Fig. 4 shows two elegant little panels of embroidery set in a frame copied from a Chippendale design. These were worked, by the members of the Royal School of Art Needlework, in wools of faded, old-world colours on a foundation of Tussur silk. However inexperienced a worker may be, she should surely be competent to execute two small pieces of embroidery such as these; but if not, there are many other materials available for this purpose. Pretty screens may be often made by simply framing a length of artistic satcen or cretonne beneath a pane of glass in a bamboo frame; while others are contrived by cutting out flowers, birds, leaves, and other designs from cretonne, and arranging them between two sheets of glass in the same way as the leaves and ferns already referred to. Here the utmost taste is

required in grouping the scraps, in order that a patchwork effect may not be given; and in choosing the designs according to their several sizes, so that Brobdingnagian butterflies may not be forced to hover over flowers and sprays so minute as to give the idea that they would assuredly break down if the insects chanced to settle.

Furniture Screens.—We now come to those very large and tall screens which, owing to their size, form no inconsiderable item in the furniture of the room in which they are placed. There are few amateurs whose ability is equal to the task of making the framework of such screens as these; but as at many of our best shops the needs of non-professional workers are specially considered, the foundation may be purchased ready to be covered or filled in with any material most convenient.

The handsomest of all screens are those with panels covered with tapestry or brocade, such as that shown in Fig. 5, which, with its frame in the Louis Quinze style, is a very good specimen of the kind of furniture screen most in vogue just now. There are few

people fortunate enough to possess sufficient antique material to fill the panels of a screen of this size; but there are many pretty cretonnes, woven expressly to imitate tapestry, which give fully as good an effect. More patience than skill, too, would be needed to embroider the three pieces necessary; and if tent-stitch be used upon fine canvas, with wools of a somewhat faded tone of colour, an excellent imitation of tapestry may be obtained. Watteau scenes are appropriate to such a frame as the one illustrated, and each panel may be entirely different from its fellows, though the general style, of course, must correspond.

Scrap Screens.—The reason that screens covered with pictures have been despised of late years, is that most people have had no idea of making them really artistic and pleasing, but are given to gather together

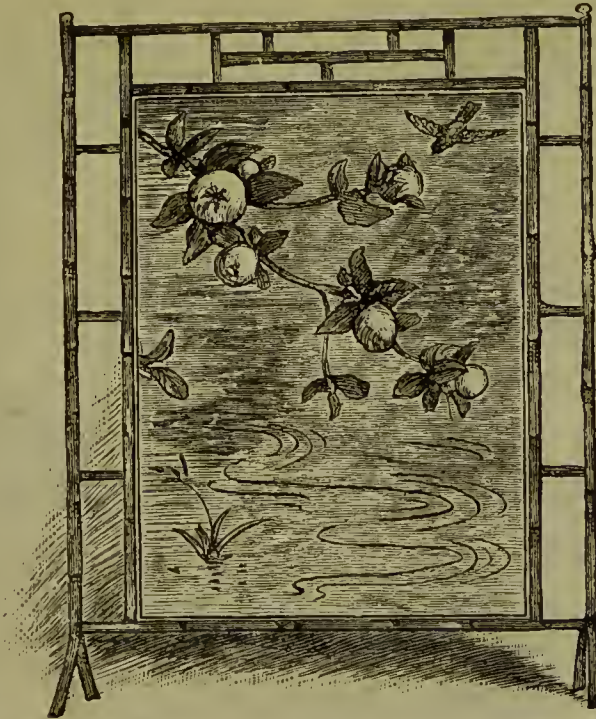


Fig. 3.—SCREEN WITH APPLIQUÉ OR PAINTED PANEL.

an immense number of odds and ends, cut out of larger pictures, and to stick them down on the panels without the slightest regard to proportionate size. Of course such an arrangement cannot fail to be other than a muddle of colour; and, unless the scraps chosen have some relation to one another, the result cannot

paper cover. This should be done by pasting thin, but smooth, paper over all the holes. The screen will not require to be entirely re-covered unless it is very dilapidated indeed. If this be the case, sheets of the *Times* newspaper answer perfectly, and will be found to set smoothly and to be strong in wear.



Fig. 4.—CHIPPENDALE SCREEN WITH EMBROIDERED PANELS.

be anything but senseless, and indeed ridiculous. In making such a screen it is well to establish some settled plan, and to follow it out from beginning to end, as regards the choice of pictures.

A superannuated screen such as is too much worn to be any longer tolerated in the best rooms, will answer well as a foundation for the scraps; or a new one may be bought which only requires the pictures pasted on. If the old screen is to be used, it will first of all be necessary to mend the rents in the

Ordinary flour paste is the best preparation in the long run for sticking down the pictures; a lump of alum, and a few drops of essence of cloves, should be boiled with it, to prevent it from becoming mouldy after it is used. Gum sticks well, but has the disadvantage of leaving an unpleasant smell behind it. The Stickphast paste answers perfectly, but, as so large a quantity is required, it costs far more than the home-made mixture would do.

The worker will soon find that she is brought to a

standstill unless she can command an enormous number of pictures, for a great many will have at once to be discarded, owing perhaps to their being wrong as to size, or not what is required as to subject. Amongst small pictures, those cut from advertisements are often by no means to be despised, whilst nurserymen's and florists' catalogues are invaluable. It is a good plan to cover one side of the screen with coloured pictures, the other with black and white

she will then serve well as a personification of Winter, the other three representing Spring, Summer, and Autumn respectively. These four pictures must be duly pasted down, flattened, and made thoroughly smooth, either by rubbing with a soft cloth or by rolling them with a roller, such as those used by paper-hangers. It will probably be found that if the screen be laid flat on the floor or on a large table, it will be easier to manage the pasting than if it is



Fig. 5.—SCREEN WITH BROCADE OR TAPESTRY PANELS.

illustrations, and, before beginning, to sort them out according to the colour, size, and subject. It is better not to cut them in too closely until the positions they are to occupy are decided upon. If the screen is fourfold, choice must first be made of four large subjects for the centre of the panels. Perhaps there are four fanciful female heads that will answer this purpose, such as are often given in the pages of the *Graphic*, *Queen*, and other illustrated papers. The first one, possibly, represents a laughing, beaming girl; the second, a woman holding a few ears of corn; the third may bear a basket or tray of fruit on her head; and if the fourth is enveloped in a fur mantle, so much the better, for

stood upright. It is an advantage, too, to let one panel get perfectly dry before the next is touched, as the screen can then be partially folded up while each panel is being covered. A collection should next be made of all the flowers among the pictures; these should be sorted out, according to the seasons, into four boxes, and cut up into small sprays, so that they can be more readily grouped. Let in a straight frame of grey paper from half an inch to three-quarters of an inch in width all round the picture. The width must, of course, be regulated by the size of the panel. Then, with a pencil, mark out the border into oblong or square spaces, down the sides as well as across the top and bottom. Surround these spaces, the number

of which must depend upon the width of margin at the disposal of the worker, with a tiny wreath of the flowers appropriate to the season. This will be a task requiring some patience, for the wreaths will probably have to be made up of very small buds and leaves, many of which will have to be fastened on separately. Within the wreaths the space must be filled with tiny scenes, all bearing reference to the season represented in the middle. In the Spring panel, for instance, one medallion may be filled by a little picture of a farmer ploughing, another sowing seed, a third of birds with their nest, and so on. For the Summer panel there is a large choice of subjects for these tiny scenes; rowing, haymaking, riding, driving, cycling, picnicking, may all find a place, and no greater difficulty should be found in filling the spaces on the two remaining panels.

The reverse side of the screen may be filled much in the same way, but should be made up of coloured pictures if the first is composed of black and white ones, and *vice versa*. Or each panel may represent one of the four continents—Europe, Asia, Africa, and America—and the object should be, to construct out of the materials at hand a fanciful landscape or panorama of scenery characteristic of each continent or some particular district in it. This should not be a difficult matter, considering the many weeklies there are which give in nearly every number a view of "foreign parts." The wreaths round these should be fuller and broader than those on the other side, and will not require interspersing with medallions.

This brief description of a scrap screen is merely intended to show that a rather more systematic arrangement of the pictures is desirable than that generally made by the amateur, and in no way pretends to be more than a suggestion as to the best

method of managing the scraps. Any detailed list of the hundreds and thousands of little pictures required to cover a good-sized screen would take up far too much space to be given here, and would indeed be of little use to the worker unless she chanced to have the same set of pictures under her control. Such a large piece of work is beyond the powers of one person, and much time will be saved if one undertakes the cutting out, a second the arrangement and smoothing

down, a third the pasting, and a fourth the sorting. When the panels are covered, and the screen has been thoroughly overlooked to see that no leaf or flower is missing or has not stuck perfectly, a coat of size must be laid over them all—ordinary starch makes a very good and clear size—and, when dry, spirit varnish should be spread over it. The screen must then be left open, to dry, in a place as free as possible from dust, and the panels must on no account be folded together for a few days, as, if the varnish should be in the slightest degree soft, the pictures will stick together, and will peel off when any attempt is made to open the screen.

A simple but useful screen for use in a bedroom is shown in



Fig. 6.—SCREEN FOR BEDROOM.

Fig. 6, and may be made of an ordinary wooden clothes'-horse, or, better still, one of the lighter frameworks sold for the purpose. A few yards of a pretty sateen or chintz is all that is required, with the exception of coloured ribbon, a hammer, and some nails. Hence the expense of such a screen is very trifling. Chintz—which, after several years of neglect, is returning to its old place in public favour—is preferable to cretonne, as it can be more easily dusted, its glazed surface enabling a duster to be passed freely over it without injury. The wooden framework must first be enamelled, for which the most prominent colour in the chintz should be taken as a model. When the

paint is dry, the material is fastened to the wooden frame with small gimp tacks. Beginning at the top, the chintz is arranged in a series of tiny pleats or flutings, each one of which is secured with a nail to the frame. When the end is reached, the chintz is cut, the edges on each side are nailed down to the frame, and a set of pleats to correspond with those at the top are made and fastened at the bottom. Each panel is fluted in the same way, and, when the chintz is all fastened on, the raw edges are hidden beneath a full ruche of narrow satin ribbon. If sateen or soft silk be chosen in preference to the firmer materials above-named, a deep hem may be made along the upper edge, with a casing along the bottom of it, into which a piece of tape is run. This, when drawn up, forms an upstanding frill, which is nailed along the top of the frame. The bottom of the sateen should be hemmed, and a tape run in so that it may be drawn up to match the top. No frill is, however, necessary here. The sateen should, if properly managed, set so evenly that very few nails are necessary—indeed, only one here and there to keep it steady. At each end of the two hems should be fastened a stylish bow of ribbon, so made as to convey the idea that the hem is drawn up by some of the same ribbon. Sometimes these screens are covered with flutings of art muslin or with Pongee silk. If the covering becomes soiled, it is easily removed, cleaned, and put on again.

Raised Embroidery for Screen Panels.—

Very effective panels may be made of raised embroidery, if sufficient skill with the brush can be exercised in painting faces on pale pink silk. The subjects chosen for this work are usually figures,

representations of the national dress of the peasants of various countries always looking well thus treated. The design is first traced on the material chosen, which is generally satin or satin sheeting. A tolerably-detailed drawing must be made, and it is then traced again on a piece of cardboard. The outlines of the figure are cut out, and cotton-wool laid over the card, to raise it wherever necessary. Thus the features, painted on pink silk, are drawn over that portion of the card which has been stuffed, as much as possible according to the general outline of the head and face. The skirt, bodice, sleeves, and other parts of the costume, are all covered with appropriate materials, which are pleated or gathered wherever required, and laid over more or less wadding, according to the amount of relief necessary. All the raw edges of the materials are drawn over to the wrong side of the cardboard, and are there held down either with glue or with stitches of strong black thread. The hair must be carefully made of combed-out strands of wool, or with large and loose French knots of silk or wool. When the figure is entirely covered, it must be glued down to the material, and the outlines followed by a line of fine coloured cord, if the work seems to require such a finish. Due attention must be paid to the representation of the buttons, fine embroideries or braid, if necessary, upon the cuffs, for it is all these little etceteras that mark the difference between a carefully-worked panel and one that is just put together anyhow. The figure on each panel of the screen should be different, and many hints may be gathered by an intelligent worker from the large and similar *appliqués* nowadays sent over from Japan for this very purpose of screen decoration.

HIGHER EDUCATION.

AFTER young people have left school, before parents can decide, and very often after they have decided, what careers shall be followed by their children, it becomes necessary to consider whether or not these children shall secure what is known as the Higher Education. Very many persons have a great dread of Higher Education. They think that it is positively injurious, unfits young people for making their way in the world, and ruins their health. Probably, so far as success in trade is concerned, they are right, simply because the time given to Higher Education is given during the years which would otherwise be devoted to learning the technicalities of a trade. With regard to advancement in the professions, however—such as the theological profession, the legal

profession, the medical profession, and the artistic profession—they are wrong; because there is little doubt that Higher Education trains and disciplines the mind of a student, and strengthens powers that are needed for the future. With regard to health also they are wrong, for when reasonable methods are employed, and proper precautions are observed, there is abundant evidence to prove that, as Lord Granville once said, “the full exercise of the mind and body is good, and not injurious to health.”

Not long ago a great English statesman, speaking of education, said that we ought to bear in mind that the main purpose of education was to deal with the mind—the youthful mind—not as a repository that is to be filled with goods like a shop, and then the

goods to be taken out and handed over the counter, the shop remaining exactly as it was while the goods passed through it, but that the main purpose of education, so far as it can be made in that direction, is to make the human mind a strong, effective, available instrument for whatever purposes it may require to be applied to.

Looked at from this point of view, Higher Education is most valuable. It no more injures the individual, than it injures a tool to put good workmanship into it, and a good polish upon it.

Another great statesman, speaking on the same subject, told how an illustrious French philosopher who happened to be examining candidates for admission to a Polytechnic Institution once confessed that when a youth came before him eager to do his best, competently taught, and of an apt intelligence, he needed all his self-control to press back the tears from his eyes. He added that "when we think how much industry, patience, and intelligent discipline, how many hard hours of self-denying toil, how many temptations to worthless pleasures resisted, how much steadfast feeling for things that are honest and true, and of good report, are represented by those who obtain certificates in Higher Education, we must feel our hearts warmed and gladdened in generous sympathy with so much excellence, so many good hopes, and so honourable a display of those qualities which make life better worth living for ourselves, and are so likely to make the world better worth living in for those who are to come after us."

With the opinions and feelings here expressed some will agree, and from them some will differ. This is only to be expected. It is, however, not our business here to advocate the claims of young people to Higher Education, or to defend the methods employed in obtaining it; it is rather to show what in the present day are the most effective means by which this Higher Education is best procurable.

Undoubtedly the means to this end most approved at present in England are examinations. The individual who wishes to obtain a thorough education goes through certain examinations. If he passes with credit, he receives a certificate or a degree, which is accepted as a test of his capacity, his intelligence, and his culture. These tests may be imperfect, but they are the only ones that are either practical or immediately available. They have both their advantages and disadvantages; and until better ones are found they will probably continue to hold the field. By their aid hundreds and thousands of persons have received a systematic education, who apart from them would have studied without direction and without guide. Therefore, it will probably be found helpful to begin

at the beginning, and state what examinations should be entered upon by those who desire to gain the stamp of Higher Education referred to; also what steps should be taken by those who intend to obtain the same.

University Local Examinations, Senior and Junior, are well known, and they furnish both a standard and a test of attainment. They are intended for young people of school age, and, as a matter of fact, they are adopted as a test of excellence in general education by hundreds who never go beyond them. They are open to members of both sexes, and they are held at various centres all over the country: a local committee, with a local secretary, being formed on application, provided guarantees can be given that a sufficient number of students will be obtained.

There are two examinations—one for the Seniors, and one for the Juniors—in each year, and the fee is £1. The age of admission varies in different Universities. Under ordinary conditions no student can be admitted to the Junior Examination of the Universities of Cambridge, Oxford, and Durham under sixteen and seventeen years of age; or to the University of Dublin Junior, the Cambridge Senior, the Oxford Senior, and the Durham Senior, under eighteen years of age. The Universities of Edinburgh, Glasgow, and St. Andrew's impose no limit of age.

Before passing a University Local Examination every student is expected to satisfy the examiner in Preliminary Subjects. In the Junior Examinations these preliminaries are usually Writing from Dictation, English Grammar, and Arithmetic. Writing and spelling are always taken into account. In the Senior Examinations the preliminaries are English Grammar (including Parsing and the Analysis of Sentences), English Composition, and Arithmetic.

The preliminaries passed, the rest of the examination is divided into parts or sections, and every student is allowed to choose a certain number of subjects, taken from the various sections. Some subjects are compulsory, others are optional. Regulations up to date can always be obtained from the secretary of the Syndicate of the University which conducts the examinations. When the papers come to be looked over, marks are given according to the degree of excellence attained. A certain number of marks simply "passes" the candidate, who is then said to have satisfied the examiner. Higher marks entitle the student to a position in one of three honour classes. The classes of honours are determined solely by the total number of marks obtained by the student. No marks are counted for any paper unless the student passes in that paper; and no marks are

counted in any section unless the student passes in that section.

The examination being concluded, and after a sufficient lapse of time, Class Lists are published, giving the names of successful candidates only. The names of the boys who pass with credit are placed alphabetically in three honour classes. The names of those who pass to the satisfaction of the examiners, yet do not pass so as to deserve honours, are placed alphabetically in two classes; the lowest class containing the names of those junior students who pass only in the Preliminary Subjects, Religious Knowledge, and English. After the name of every boy is added his place of residence, the school (if any) from which he comes to attend the examination, and the name of his schoolmaster. Separate lists are also given of those boys who may specially distinguish themselves in particular parts of the examination, and in these lists the boys are arranged in order of merit. Similar classes and lists are drawn up for girls; but the names of those who do not appear are not given.

The students who pass with credit, or satisfy the examiners, receive certificates to that effect. A student who barely satisfies the examiners in the minimum number of subjects may be rejected on the ground of general weakness. Every certificate specifies the subjects in which the student has passed with credit or satisfied the examiners, and the class obtained, if any.

The directions and regulations given to every student on examination require to be very carefully studied. To neglect them, leads to a loss of marks which need not have occurred.

There are various advantages attached to the University Local Examinations which add to their value. Thus, a senior or junior certificate satisfies the preliminary requirements of the General Medical Council if it includes Latin, Mathematics, the elements of Statics, Dynamics, and Hydrostatics, and one of the following—Greek, French, German, Logic, Botany, Zoology, Chemistry. But the Junior Certificate will not be accepted unless the whole of the subjects necessary to satisfy the preliminary requirements have been taken at the same time. It excuses also the Preliminary Examination before entering into articles of clerkship with attorneys and solicitors, or with chartered accountants.

In connection with all University Local Examinations certain scholarships and prizes are offered, which vary in amount according to the status of the University.

The College of Preceptors' Examinations, Bloomsbury Square, W.C.—The College of Preceptors holds half-yearly Pupils' Examinations,

the certificates of which are recognised as guarantees of a good general education. Also, if taken on special subjects, they are accepted by the General Medical Council and other bodies by whom the College Certificates are recognised, and candidates who hold them are excused the Preliminary Examination before entering into articles with attorneys and solicitors, or with chartered accountants.

The published regulations of the Law Society state no special subjects.

The examinations required by the General Medical Council are limited to the following subjects:—

First Class: Obligatory Subjects.—(1) English Grammar, with Analysis of Sentences and Composition and Outlines of the History of English Language and Literature; (2) English History; (3) Geography (including Physical and Mathematical); (4) Arithmetic; (5) Algebra (including Quadratic Equations); (6) Euclid, Books I.—IV. (or the portions of Geometry treated therein); (7) Latin; (8) one of the following languages—French, German, Spanish, Italian, Greek.

The Latin Examination is in any two of the following works—one prose, the other poetical—Cæsar, Bell. Gall., Books I. and II., or IV. and V.; Sallust, Catiline; Virgil, *Æneid* (one of the first three books); Cicero, *De Senectute*; and Horace, Odes I. or III. The Greek Examination is in any one of the following books—viz., Xenophon, *Anab.*, Book I.; St. Luke's Gospel; Homer, *Iliad*, Book I. Latin and Greek prose composition of a simple kind is required, and the examination papers will contain grammatical and other questions arising out of the passages selected for translation, as well as short and easy passages for translation from authors not herein specified.

Optional Subjects.—(1) Elementary Mechanics of Solids and Fluids (comprising the elements of Statics, Dynamics, and Hydrostatics); (2) Natural History (Botany, Zoology, Physiology, and Geology); (3) Experimental Physics (Acoustics, Light, Heat, and Electricity); (4) Chemistry.

Second Class: Obligatory Subjects.—(1) English Grammar, with Analysis of Sentences and Composition; (2) English History or Geography; (3) Arithmetic; (4) Algebra (including Simple Equations and Fractions), or Euclid, Book I., or the portions of Geometry treated therein, or, for Girls, an optional subject; (5) a foreign language; (6) one of the following languages—French, German, Spanish, Italian, or a Science subject, or the *other* subjects under (2) or (4).

The Latin Examination is in Cæsar, Bell. Gall., Book I. or II., or in one of the first two books of Virgil's *Æneid*. Simple English sentences for translation into Latin will also be given, and the

examination papers will contain grammatical and other questions arising out of the passages set for translation into English. The Greek Examination is in Xenophon, *Anab.*, Book I.; St. Luke's Gospel; or Homer, *Iliad*, Book I.

Optional Subjects.—(1) Elementary Mechanics of Solids and Fluids (comprising the elements of Statics, Dynamics, and Hydrostatics); (2) Natural History (Botany, Zoology, Physiology, and Geology); (3) Experimental Physics (Acoustics, Light, Heat, and Electricity); (4) Chemistry; (5) Greek.

The "Professional Preliminary" examinations take place in March and September. The fee is 10s., and the local fee of the centre, usually 2s. 6d. Candidates are required to give six weeks' written notice to the Secretary of their desire to be examined, and the fee is required to be paid twenty-one days prior to the date of the examination. Dates and other details may be obtained from the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.

The Examinations of the College of Preceptors are open to persons of both sexes.

London Chamber of Commerce.—This body holds an examination for Commercial certificates every year in the first week of July. The obligatory subjects are English; Commercial History and Geography; Arithmetic (Foreign Weights and Measures, Currencies and Exchanges); Algebra; Euclid, Elementary Mechanics; Book-keeping and Accounts; one modern language (French, German, Spanish, Portuguese, or Italian); Elementary Drawing. The fee is 20s. Entry forms may be obtained from the Secretary, Botolph House, Eastcheap, E.C. Nearly 200 firms, in all branches of trade, have consented to give a preference to candidates for employment holding these certificates.

Higher University Local Examinations.

—Next in importance and popularity to the College of Preceptors' Examinations and the Junior and Senior Local Examinations may be named the *Higher Local Examinations*, which are intended for students above the age of 18. The Examination is divided into seven groups, viz.: (*r*) Religious Knowledge; (*a*) English Language and Literature; (*b*) Ancient and Modern Languages; (*c*) Mathematics; (*d*) Moral Science; (*e*) Music; (*h*) English and French History. The advantage of this examination is that the student can take one group at a time in any order, and can spread the examination over two or three years. Consequently this examination is particularly suited to the needs of individuals who are endeavouring to obtain higher education while occupied in other ways. To obtain a Certificate, a student must have passed in Arithmetic, and in three

of the groups, of which *b* or *c* must be one; *r* and *e* do not count as two of the three groups required for a Certificate, though either of them counts as one. The Regulations for these examinations can be obtained from the Secretary of the Syndicate of the University which controls them.

Degrees.—To obtain a *Degree* in a college or University is simply to obtain a recognition of the fact that a certain degree of culture has been gained, which recognition is permission to add the sign of attainment to the ordinary name of the individual. Degrees are divided into various classes: thus, there are degrees in arts, B.A. and M.A. (Bachelor of Arts and Master of Arts); in science, in medicine, in civil law, in divinity, and in music, there are the degrees of Bachelor and Doctor: and all these degrees are conferred as a sign of success in examination.

For several centuries the Universities of Oxford and Cambridge have conferred degrees on students who satisfied the statutable tests. They are, however, by no means the only bodies which possess this power, although they are still the most celebrated of the English Universities. The University of London, the University of Durham, the Irish and Scotch Universities, all confer degrees; and there are numerous Universities in different parts of the Continent (especially in Germany), and in America, from which may be obtained these much-coveted signs of culture and scholarship. The chief difference, however, between Universities which have existed for centuries, and those which are of modern origin, is that the former impose a test of residence, while the latter gives degrees to all who can pass certain examinations. Pass degrees are given to all who can pass the examination. Honour degrees are bestowed only on those who distinguish themselves in the examination. Degrees are of value according to the status of the University conferring the same, and graduates have a high appreciation of their own particular University. Those who set most value upon classical attainments as a rule prefer Oxford; while mathematics and physics are more thoroughly taught at Cambridge. The B.Sc. and D.Sc. degrees of the London University, which can only be obtained by very "stiff" examinations indeed, are considered the best scientific degrees of any.

Matriculation Examinations.—The first thing which a student has to do who wishes to obtain a degree in any University is to "matriculate" in that University; and not until he has done this can he enter for any of the examinations which have to be passed before the degree to which he aspires can be obtained. The older Universities matriculate without further inquiry any students sent up by the

Colleges for the purpose. The London University, however, will not even allow a student to matriculate without having passed a special examination. One result of the enforcement of this regulation has been that the general term Matriculation is now in many quarters understood to constitute a degree in itself. In speaking of Matriculations, therefore, it will be well to treat the London Matriculation Examination as typical of all. The Examination for Matriculation in connection with the London University stands above all the other examinations which have been named as a test of capacity; and this test is so generally recognised all over the world that it is of great value. It is also understood to be more difficult than other examinations of the sort, and it differs from the examinations already described in this—that whereas in other examinations the candidate may choose his subjects, and if he obtains a sufficiency of marks he passes, although he may be very weak in some directions, in the Matriculation Examination a candidate must pass in *all* subjects, and attain a certain standard of excellence in all, or he fails. The Matriculation Examination is the first of all the series which have to be passed for degrees; consequently, no degree can be taken without it; yet, because the candidate has to pass in every subject, there are few loopholes for incompetency. It is, therefore, very desirable that young people who intend to matriculate should enter as soon as possible after they leave school, while every study is still fresh in their minds. Unless this is done, the probabilities are that the details of subjects not congenial to them will be forgotten, and once forgotten, will not easily be mastered again, although the student may have progressed in subjects which are congenial to him. Indeed, it is the regulation that students must pass in all subjects which constitutes the peculiarity of this examination, making it, as it were, the only entrance through which degrees in medicine, law, science, art, or divinity can be obtained.

There are in connection with the London University two examinations for Matriculation in each year—one beginning on the second Monday in January, the other on the third Monday in June.

No candidate is admitted to the Matriculation Examination unless he have produced a certificate showing that he has completed his sixteenth year.

The examination is conducted by means of printed papers, but the examiners are not precluded from putting, for the purpose of ascertaining the competence of the candidates to pass, *viva voce* questions to any candidate on the subjects in which they are appointed to examine.

Candidates are examined in the following subjects:—

- 1.—Latin.
- 2.—One of the following languages — Greek, French, German, Sanskrit, Arabic.
- 3.—The English Language and English History, with the Geography relating thereto.
- 4.—Mathematics.
- 5.—Mechanics.
- 6.—One of the following branches of Experimental Science: Chemistry, Heat and Light, Magnetism and Electricity, Botany.

A syllabus of the details required on each subject may be obtained gratis by writing to the Registrar, University of London, Burlington Gardens, W. The matriculation fee is £2. The Matriculation Examination of the London University, as well as the Examinations for Degrees, are all open to persons of both sexes.

Going to College.—Where means and opportunity permit, young people not only study after leaving school, and go up for examination in order to obtain certificates and degrees, but they “go to college”; that is, they join one of the colleges attached to one of the older Universities, reside therein, and qualify themselves for taking a degree by attending lectures and keeping terms within its walls. As already explained, there are some universities (known as Teaching Universities), like the London University, which do not insist upon residence or “keeping terms”; but others, of which the National Universities of Oxford and Cambridge are a type, require undergraduates to attach themselves to one of the colleges within their jurisdiction for a certain period, and to go through the course of study prescribed by the authorities of the University.

There is almost as much difference of opinion about the value of a college education as there is of the value of higher education. Frequently the question is asked, “What is a college education good for?” and conflicting answers are given—answers occasionally dictated by prejudice rather than by knowledge. Perhaps parents who are in doubt on the subject may be glad to read the opinion of an authority. Its author, Professor Morse, of Amherst College, U.S., was asked some time ago by an American editor to give his views on college education for publication, that they might serve as a guide to individuals who were in doubt and perplexity concerning it. His reply was as follows:—

“What is a college education good for? It does much for a man as an individual. College life is in itself highly agreeable. Its cares are few, its joys are many, its employments are attractive. Most men reckon the friendships and acquisitions made at college among the largest and most lasting sources of personal happiness. A college education is of use also in preparing for certain honourable and useful

vocations. It cannot, it is true, ensure success in these. All that it can do is to help a man to help himself. Still, in the so-called learned professions, the help which it affords is very great; for the highest success it is, in fact, almost indispensable.

"But what a college education does for a man as an individual, although important, is of minor consequence when compared with what it does for him as a citizen. A college, whatever its nominal relations to the State may be, is in reality a public institution. It is zeal for the public good which leads to the founding and endowment of colleges, and which secures for them the best services of guardians, teachers, and friends. The highest good, therefore, which a student should expect from a college education is increase of desire and capacity for serving the public. The results which a college course are calculated to produce are discipline of mind, scholarly tastes, catholicity of spirit, elevation of view, and devotion to public as distinguished from private interests; and every one of these results is an important item in a man's equipment for good citizenship.

"Not all who go to college should go there. In most colleges there are some who get little good, and at the same time do and suffer considerable harm. No man should go to college whose chief aim is to have a good time. He can have his good time elsewhere. The endeavour to educate him at college leads to a misuse of trust funds, and a waste of energy on the part of the faculty. On the other hand, every one should go whose purpose is to be and to do the best of which he is capable. Concerning such a man there is no room for doubt. Colleges exist in order that they may train those who will afterwards count for something in the community.

"As soon, therefore, as a thorough preparation has been completed, a man who answers the description given should go to college, *but not before*. To enter college before one is fully ready is a common and yet a very grave mistake. This precipitancy leads in some cases to a degree of overwork which injures mind and body; in others it leads to methods of meeting the immediate requirements of the lecture hall, which sacrifice the proper ends of study; in still others it leads to loss of ambition and the surrender of high standards. In preparing for college there are two things to gain: first, the knowledge necessary in order to pass entrance examinations creditably; second, good habits of study: and of the two, the latter is the more important."

The choice of a college is a subject which requires careful thought and anxious inquiry. The number of colleges available are numerous, yet there are in different colleges considerable variations in the requirements—the aims, the advantages, and the

expenses associated therewith. Thus, it has passed almost into a truism that, though no one college is best for all, yet a certain college is best for each. The character of a particular college is quite as distinctive as that of a particular city. One college is favoured by men who intend to be clergymen, another by lawyers, a third by doctors. On this point Professor Morse says: "Colleges, as well as students, differ greatly: hence, the college that is best for one student is not of necessity the best for another. Each case should be decided by itself, and a right decision must be based on knowledge of the individual as well as considerable acquaintance with eligible colleges."

In order to obtain this considerable acquaintance, inquiries must be made and catalogues must be consulted. Colleges are established in all parts of the country. In England, those of Oxford and Cambridge are the most celebrated; but they simply stand at the head of a long list of institutions, all of which are doing valuable service to the cause of higher education.

The expense of a college education varies enormously in different colleges. When, therefore, the parent has made choice of his college, he would do well to write to the secretary of the institution which he most favours, and to ask for a copy of the rules and a statement of terms. Thus he will gain a specific knowledge of the necessary expenses and of the possibilities of the case. As a matter of fact, he will discover that although there are certain sums which must be paid, the actual cost of the college course will be determined to a great extent by the ideas and habits of the student. A young man accustomed to economical ways of living, to work hard, and to help himself, will go through college at a tithe of the expense which would be incurred by one accustomed to luxurious living and to self-indulgence. Yet, at the end of the educational course, it is probable that the worker would have reaped greater advantage than would the idler.

Scholarships, or Aids to Education.—

Parents who find it difficult to obtain the money required to pay the expenses of the collegiate course should be on the alert to avail themselves of one or more of the numerous scholarships, bursaries, exhibitions, clerkships, and other aids of the sort which are offered to deserving students. Prizes of this description, of more or less value, are attached to almost all colleges, and they are a great help to those who can obtain them. Sometimes they are in the gift of influential persons; more often they are intended for special classes; but numbers of them are open to competition. The colleges of Oxford and Cambridge are exceedingly rich in prizes of this

nature, and these aids are increasing every year, because wealthy persons have realised how useful money can be made that is invested in this way, and they leave money by will to found scholarships which shall bear their name, and thus keep their memory green by assisting those who need assistance. Many of the large schools also bestow scholarships on their ablest students, and there are numbers of clever boys who have educated themselves by the scholarships they have won. To win prizes, a boy must be clever and industrious; yet those who know tell us that industry has more to do with success than has talent. As a rule, the boys who can perseveringly work are the boys who make their mark.

Once of a day young men whose education at the University was assisted by means of scholarships were somewhat despised by their fellow-students. Rich men's sons looked down upon them, and treated them in a cavalier fashion. In these days, however, the situation is entirely changed. Multitudes of poor men's sons are now taking their place at the Universities, and scholars, being workers, take the highest honours of the University. A University professor once said: "Every endowed college rests on a basis of charity. The tuition charged covers only a part—in some cases less than half—of its expenses. Colleges are public institutions, and the aid which they offer is in the nature of an advance, which public-spirited citizens provide, in order that students, by its use, may be qualified to do better work for the State. If the results are a heightened sense of obligation, and a better preparation for public service, the student in receiving aid should feel as the soldier feels when he receives the equipment for which he does not pay immediately, but for which later he will more than pay in honourable service."

There are some colleges which offer their advantages to men only. Oxford and Cambridge, for instance, still refuse to confer degrees on women, although they permit women to be examined for honours. The supporters of the higher education of women hope that this difference will soon cease to exist. By way of compensation to women, therefore, one or two colleges for women have been established in University towns; and at these colleges women reside and study, subject to very much the same regulations that prevail at men's colleges. As a further assistance to women some colleges have special classes for ladies only. Amongst the colleges intended for women the following are the most celebrated:—

Bedford College, 8 and 9, York Place, Baker Street, London.
Westfield College, Mansfield Gardens, South Hampstead, London.
King's College, Ladies' Department, Kensington Square, London.

Queen's College, Harley Street, London.
University College, Gower Street, London.
University College Hall, Aberystwith.
University College Hall, Bangor.
Girton College, Cambridge.
Newnham College, Cambridge.
Aberdare Hall, University College, Cardiff.
Ladies' College, Cheltenham.
Alexandra College, Dublin.
Royal Holloway College, Mount Lee, Egham, Surrey.
Queen Margaret College, Glasgow.
Owen's College, Department for Women, Manchester.
Women's College, Newcastle-upon-Tyne, Durham.
Lady Margaret Hall, Oxford.
St. Hugh's College, 25, Norham Road, Oxford.
Somerville Hall, St. Giles' Road, West Oxford.

Particulars as to the terms, scholarships, and rules of all these colleges may be obtained on application to the secretary of each institution.

University Extension Lectures.—A means of obtaining higher education of the greatest value to persons engaged in the ordinary occupations of life, and, therefore, quite unable to go to college, or to devote two or three years to study after leaving school, exists in what is called the University Extension Scheme. Lectures and classes in connection with this scheme are established in many populous centres; and if a sufficient number of students can be guaranteed, it is generally possible to have a course organised, in any suitable district, by communicating with the secretary of the syndicate. The following are the regulations of the Cambridge Syndicate:—Lectures and classes extend over three months before Christmas and three months after Christmas. There is a lecture and a class in each of the twelve weeks during each term; the twelve lectures and classes form a continuous course on one subject. Each lecture is accompanied by a syllabus distributed to the pupils, and by questions. Those who desire to answer these questions do so in writing at home, and submit their answers to the lecturer for correction and comment. The lecture lasts about an hour. The lecturers are University graduates.

The class in each subject is formed only from among those attending the lectures in that subject, and consists of those desirous of studying it more fully. The class studies, at the discretion of the lecturer, either the subject of the lectures, or cognate subjects bearing directly thereon. The teaching is more conversational in the class than in the lecture. The class occupies from half an hour to an hour. The lecturer remains in the lecture-room for some time after the conclusion of each lecture and class, in order to answer questions or solve difficulties which have occurred to pupils, and to give advice as to text-books and other means of efficiently studying the subject.

Written examinations are held at the conclusion of the courses by examiners appointed by the syndicate, and certificates are granted, based (1) upon the lecturer's report in the weekly papers, (2) upon the examiner's report of the written examination. No one can obtain a certificate who has not attended both the lectures and the classes to the satisfaction of the syndicate.

A list of the candidates who have satisfied the lecturer and examiner is published, the names being arranged in alphabetical order. The list also indicates those who are recommended both by the lecturer and by the examiner for special distinction. In order to encourage continuity of work, the Vice-Chancellor's certificate is given to students who hold six term certificates for subjects included under the heads Literature, History, and Science. The six certificates must have been obtained in six different terms, but the terms need not necessarily be in successive years.

Further information may be obtained from the secretary to the syndicate.

Instruction by Correspondence.—A very easy way of gaining higher education and of promoting self-culture is for a student to join what is known as a University Correspondence Class. These classes were established to assist the education of persons residing at a distance from towns, and unable therefore to attend University education lectures, or to command the advantage of personal instruction in preparing for examinations. It has often been remarked that there are numbers of people who would be only too glad to obtain the diploma or certificate of examination, which is valuable not only to the teacher, but also to legal and medical students, if they had the opportunity to gain instruction. Evidently, individuals who talk thus do not know that if only a student will set to work privately in the proper way, he may not merely "pass" the examinations, but he may gain high honours at the London University by devoting a few hours daily to reading, without abandoning other work. Correspondence Classes are under the direction of members of the various Universities, who are appointed to the business of suggesting good text-books to the students. These teachers point out what parts of a book should be read with special attention, they set papers of questions upon the books read, and correct them when they are sent for the purpose. In this way they "coach" the student, and it is a fact that a fair percentage of the students who have passed recent examinations have been taught by correspondence.

Speaking of Correspondence Classes, the editor of the London Matriculation Directory says: "Many

students find it quite possible to dispense with the luxury of private tuition when once they have had pointed out to them what books they ought to read. But the choice of a good text-book is a difficult matter. Unless a book has been written purposely for an examination, it is almost sure to contain much matter outside the syllabus, while points which often form the subject of questions are but cursorily treated. The most economical way of getting to know what parts of a text-book should be read with special attention is to obtain directions from an experienced coach, either orally or by correspondence."

University Correspondence Classes are now organised in connection with the Universities of Oxford, Cambridge, London, Glasgow, and Edinburgh, and information concerning fees and other details can easily be obtained on application to the secretaries at the different Universities. When we remember what a serious expenditure of time and money is required in order to obtain a degree at a University, or to secure the assistance of a private tutor, we must acknowledge that in these classes higher education has been made as easy as human ingenuity can make it.

Home Reading Circles.—There is still one other means of gaining higher education which ought to be mentioned, and that is association with a Home Reading Circle. All highly-educated people have a high appreciation of the value of good books. A great writer once defined culture, as acquaintance with the best that has been said and thought, and in no way can this acquaintance be more readily made than through books. Mr. Lowell, the American author, said that "the art of reading was the key that admits to the whole world of thought and fancy and imagination, to the company of saint and sage, of the wisest and wittiest, at their wisest and wittiest moments; that enables us to see with the finest eyes, hear with the finest ears, and listen to the sweetest voices of all time." The difficulty, however, is that only through higher education and culture can we know what books are the best. "Of making many books there is no end," said the wise man, and the press teems with volumes; yet very much of the literature that appears is worthless, and worse than worthless, because to read it and to form the habit of reading it is to destroy our power of reading what is of value. This is what the German poet Goethe meant when he said, speaking of the choice of books, "Choose well: your choice is brief, but endless;" and our great English teacher Ruskin repeated the same thought when, using words which have been often quoted, he said, "Good books, good

for all time, have been written in all ages by their greatest men, by great leaders, great statesmen, and great thinkers. These are all at your choice, and life is short. You have heard as much before; yet have you measured and mapped out this short life and its possibilities? Do you know that if you read this, you cannot read that; that what you lose to-day, you cannot gain to-morrow? Will you go and gossip with your housemaid or your stable-boy, when you may talk with kings and queens; or jostle with the common crowd, when all the while this eternal court is open to you, with its society wide as the world, multitudinous as its days: the chosen and the mighty of every place and time?"

By way of helping those who wish for help to choose good books, there has been established within the last six or seven years a Home Reading Circles' Union, the object of which is to direct and encourage home reading, and to give practical help and guidance, in an economical way, to those engaged in such reading. This union is an imitation of a similar union which has been in active operation for many years in America, and which is known as "The Chautauqua Movement." The "Chautauqua" (according to Dr. Fitch, Inspector of Schools) is a company of readers who pledge themselves during the year to study some half-dozen chosen books, and to place themselves, as far as possible, in communication with others of like tastes who are pursuing the same course of reading. Its members are found all over the United States, and even within the Canadian Dominion. Under its auspices the reading of some 150,000 people is directed, and amongst the members are workmen, farmers, servants, pioneers in the Far West, apprentices, clerks, teachers, and mothers of families. The President, Chancellor, and Council of the Chautauqua are all men of academic distinction; and year by year they put forth lists of books comprising the best works in history, economics, astronomy, physiology, Biblical antiquity, and general literature. The general aim is described as that of an organisation designed to promote habits of reading in connection with the routine of daily life, especially among those whose early educational advantages have been small, so as to secure to them the college student's general outlook upon the world of life and letters, and to develop the habit of close, connected, and persistent thinking. The suggested course of reading is announced early in the year, and particulars are published respecting the readiest and most economical way of procuring the books. In the autumn every member is furnished with a four-page memorandum or question paper, and he is advised to fill this up as each book is finished—from memory, if possible, but in any case in his own words. A small fee is charged, sufficient to provide a fund

for the central office, where a staff of qualified readers overlook the papers. To all who pursue the course during four years, and send in satisfactory papers, a certificate is granted.

The American Chautauqua, Mr. Fitch says, has done most valuable service. It has been the means of illuminating hundreds of homes; it has brought better books on the shelves, better pictures to the walls, better talk to the fireside. An eminent Boston scholar and preacher gave a generous and yet accurate statement of the effect it had produced. In an address he delivered before assembled Chautauquans he said:—

"I see busy households where the daily care has been lightened and inspired by the few moments caught every day for earnest study. I see chambers which a single open book fills with light like a burning candle. I see workshops where the toil is all the more faithful, because of the higher ambition which fills the toilers' hearts. I see parents and children drawn closer to one another in their common pursuit of the same truth, their common delight in the same ideas. I see hearts, young and old, kindling with deepened insights into life, and broadening with enlarged outlooks over the richness of history and the beauty of the world. Happy fellowships in study, self-conquests, self-discoveries, brave resolutions, faithful devotions to ideals and hopes: all these I see as I look abroad upon this multitude of faces of the students of Chautauqua."

This is the work done by the American Home Reading Circles' Union. The English Home Reading Circles' Union is still in its youth, and it is hardly yet fully developed. It has, however, a fair future before it. It numbers amongst its supporters men eminent in literature and science, and there is every hope that in time it will be a most valuable means of promoting the higher education of the nation. Householders who wish to join it, and to acquaint themselves with the details of its management, may do so by applying to the Secretary, Surrey House, Victoria Embankment, W.C.

Such, then, are the chief means available for those who wish to secure "Higher Education." No one can say they are not varied, or that they are meagre and insufficient. They are being extended and enlarged every year, and it may be that one of these days they will be appreciated as they deserve to be. This appreciation would be advanced if parents would keep in mind the words of Sydney Smith:—"The real object of education is to give children resources that will endure as long as life endures; habits that time will ameliorate—not destroy; occupation that will render sickness tolerable, solitude pleasant, age venerable, life more dignified and useful, and death less terrible."

GARDENING FOR JULY.

Summer Pruning of Shrubs.—In the majority of instances the greater portion of the growth of shrubs will have been completed, or nearly so, during this month. Different situations and localities influence this in a certain manner, but about the middle of the month may be taken as an average time for performing any necessary summer pruning, so as to keep the plants to a certain extent shapely, but not absolutely of a formal character. The work at times is done with hedge-clipping shears, but this mode of operation cannot be too much condemned. It is a saving, no doubt, in point of time; in other respects, there is no single point in its favour. If the plants operated upon with the shears happen to have fairly large leaves, it is not possible to avoid cutting them asunder. The best way is to use either the knife or scissors; for this special work we prefer the former, unless any extra large shoots have to be removed. The most practical manner of doing the work is to thin out the growths that have made stronger shoots than their neighbours. This will be the means of a more equal distribution of the sap another season, and also prevent the more weakly shoots from dying off. By this means the plants operated upon will each be kept well within bounds; the stronger-growing one will thus not nearly as soon encroach upon or overgrow its neighbour, which may not have made such rapid progress. In performing the work, note should be taken of the state of each individual kind of shrub; those that are still growing freely should be left till the last, or the result will be a second growth that is by no means desirable. This cannot well be avoided if it is done in a haphazard manner, each one in its turn as it is come to, with little or no regard to its immediate requirements. Rhododendrons, hardy Azaleas, and other plants, generally termed American plants, should be made exceptions of in the foregoing remarks, until it is absolutely necessary to curtail their growths. The better plan with these is to take advantage of the flowering period, and utilise the flowers in a cut state. In this manner they can be kept well within bounds for several years to come.

Clipping of Hedges.—About the end of the month, and after the shrubs have been finished, will be a good time to clip hedges. The reason for deferring this till the last is because of the risk of a second growth being made after a regular clipping all over. As long as it is possible to allow a little extension of the growth year by year, the hedges will be kept in better health. When the extreme limit has been reached, both in height and width, it will be necessary to cut them back severely hard, at

the same time thinning out any weakly or dead shoots. In this way new life and vigour will be imparted to the plants, being far preferable to allowing them to encroach upon other things or to shade them by reason of their height. Hedges, when well managed, are most useful, both as screens to shut off any undesirable view, and as a protection to the occupants of the garden in exposed situations. When hedges have to be cut back and reduced in size, it is better to perform the work in February or early in March, before growth commences.

Watering of Shrubs in General.—In the case of freshly-planted ones, advice was given in last month's work. This will require renewed attention if the weather is very hot and dry during this month and August. Other shrubs also will suffer during prolonged drought, especially if the soil be permeated with the roots of large or luxuriantly-growing trees. In the case of such, the better plan will be to hollow out the soil around the stem in proportion to the size of the plant, and thus cause the water to penetrate downwards to the roots, instead of running away to other parts. These waterings should be repeated two or three times at short intervals. In most cases this will be sufficient until rains again fall to benefit them.

The Lawn.—Should the weather be very dry and warm for any length of time, the lawn will often look brown—chiefly in patches; and the grass, in bad cases, appear to be almost burnt up beyond recovery. At such times but little mowing will be necessary: it should, however, be done occasionally, so as to prevent the grass from getting too long for the machine. After a mowing it will be a good plan to spread the cut grass thinly over the worst-looking parts of the lawn, and then water those portions freely, continuing to do so for a few days; in that way the grass will be in a measure revived, and a fresh growth commence. The mown grass will conserve the moisture, prevent the ground under it from getting so dry, and thus render it more fit for the reception of the water that is applied. This is a simple way, done without trouble, and not in any manner to be considered unsightly. As soon as the waterings have well penetrated the surface of the lawn, the grass will recommence to grow: then the mown grass should be removed, to prevent the other from growing up tender. Occasional waterings should afterwards be given for a few days.

Some weeding of the lawn will, in many cases, be necessary about this time of the year. Dandelions will at times sprout out a secondary growth where

the poison previously recommended for their extermination was not quite effectual. Young plants, too, that were not positively visible then will now be plainly so. These will have been the result of seeds, previously ripened, most of which are sure to grow if allowed to fully mature, and then be distributed by the first wind that blows upon them. The same remedy should again be repeated, after which they should not give cause for future trouble. The small-growing Plantain will now push up its flower spikes; at other times it is not so very unsightly, but now will be a good time to have any such pulled up before the seed can be ripened for a further increase. This can best be done with a sharp knife or small chisel, which, if thrust well under the tufty growth, will cut it clean away. Any rank-growing kind of grass that may perchance have escaped notice thus far will now make itself more plainly visible. These, too, should be cut out before the grass proper has been injured thereby. Lawn-tennis courts will need extra attention to other parts of the lawn; extra waterings after a good period of play, and frequent rollings, will go a long way towards keeping the ground in good order. Any parts that become worn into a state of unevenness should have a garden fork thrust under such spots; then, by gently bearing upon the fork, the ground will be raised, afterwards to be faced off smoothly with the roller.

Paths.—After very heavy rains and storms the paths will need extra attention. This will generally occur when a heavy rain sets in after a dry time. The gravel then, being rather loose, is more easily washed out of place and carried away to the lower spots when there is any material deviation in the levels. Whilst the paths are still well moistened this gravel should be replaced as well as possible, and then all thoroughly well rolled down. When this is completed, the drains will most likely need some attention, by keeping the openings clear and the spaces under the gratings cleaned out, to prevent any sediment from gaining admittance to the pipes, or in due time they would become choked.

Rockery and Rootwork.—Just now the chief point to observe is that of supplying the plants with sufficient water at the root and frequent sprinklings overhead. In the former case much assistance may be given by carefully pricking up the surface of the soil, so that the water can better penetrate it. Where any Ferns are getting too much crowded together, some of the fronds can be cut away and used in floral arrangements; or, if the case is such that a plant or two can be taken out and replanted in another spot where needed, this might be done with advantage. In cutting fronds of ferns for decorative

uses, those should always be taken first where the plants are crowded, and only in cases of urgency should any be cut from the thinner spots. No haphazard mode of procedure in this respect should be permitted, or the plants will be soon disfigured, and the weak ones made still weaker if persisted in.

Caution against falling Boughs of Trees.—This more particularly has reference to those of the English Elm, which tree, when it arrives at a considerable age, is very much disposed to lose its boughs. At this season of the year, where such trees exist it may perchance happen that seats have been placed under their shade. It is never safe to do this, for the boughs, even of large size, will often fall without any previous warning whatever, and that, too, during the quietest state of the weather possible. We have repeatedly noticed the occurrence of this from July onwards to the end of September, and do not now ever place any seat under these untrustworthy trees.

Flower Beds and Borders.—The more attention that can be given to these, even now they are in full beauty, the better will be the return in a more prolonged season of flowering. Geraniums that are planted in beds will be all the better for frequent picking over, to remove the nearly exhausted flower trusses, and thus prevent them from ripening any seed to the weakening of the plants. It is better also to remove the decaying foliage, of which, as the plants grow into each other, there will of necessity be some at least. A close watch should also be kept upon the depredations of a species of caterpillar which, if left alone, will soon riddle the leaves and devour the young flower trusses before they have time to develop; thus a quantity of damage may be done almost before one is aware of it. Where this insect is very troublesome, the better plan will be to search for it after dark with a lamp, which is better than a candle, as the grease deposits from the latter will be rather unsightly upon the foliage. Any shoots of extra strength that are getting taller than the rest should have their points taken off, to preserve the uniformity of the bed.

Verbenas are frequently troubled with mildew towards the end of the month if the weather should have been extra dry; this can be easily remedied by dusting the plants overhead with a sulphur duster well charged with that useful article. A good preventive against an attack of this enemy of plant life in the case of the Verbena is to keep the plants frequently watered overhead and at the roots. Some more pegging down of the extended shoots will now be necessary where the plants are growing freely. It will also be noted that strong shoots are

oftentimes pushed forth from the old stem near to where it enters the soil. When these are long enough they, too, should be pegged down.

Lobelias will chiefly need attention in keeping them within proper bounds by pinching off the points of the outside shoots, and in keeping them well supplied with water in dry weather. All plants of ornamental foliage, where planted together either in masses or as edgings, should also be kept well within their proper limits by pinching out the points of their growths, or, in the case of dwarf-growing kinds, by pegging them down. The Golden Feverfew is an instance of the former; it will at times show for flower, but should be nipped in the bud. The variegated Ice-plant is an instance of the latter, and should be pegged down until it has covered its allotted space, and afterwards kept pinched. Heliotropes can generally be kept fairly compact by cutting the outer trusses of flowers for vases in the house.

Dahlias and other strong-growing plants must have all necessary attention given them in the way of ties to support and guard them against injury by high winds. It is not pleasant to see a breakdown after all the pains that have been previously taken. Gladioli will also require the support of stakes, so that the flower spikes as they grow may be tied thereto. The same remark applies to any plant of rather slender growth that is at all liable to be swayed to and fro during high winds; in some instances small sticks will be sufficient, in others sprays of birch will suffice. Nasturtiums should have all the seed-pods removed before they have time to swell and ripen; the flowering period will thus be considerably lengthened. Where these are at all disposed to make too much of a leafy growth, the stronger of the leaves where they are thick should be picked off. In any case, where the plants are poor through having been planted rather thickly at first, it will be better to remove a few of the worst ones, than to permit them to grow into and weaken each other, which will occur in a short space of time.

Hardy Herbaceous Plants and Hardy Annuals.—Many of these will now be in their full beauty, a few will have ceased flowering, whilst others will not yet have commenced to flower at all. In the case of the first, the chief aim should be that of preserving them in good condition as long as possible. This can partly be done by supplying them with a liberal amount of water whilst the resources of the plant are taxed to the utmost extent in the production of its flowers; any of the latter that are faded should at once be removed, before the seed-pods in any case have an opportunity of swelling.

Those that have ceased flowering should have all the old flower stalks and spikes removed at once; when this is done in good time, it will often happen that a second crop, but of lesser amount, will be produced in the autumn. We have noticed this frequently in the cultivation of the Delphinium. Those that are not yet in flower should have all requisite attention paid to their requirements; if necessary, make them further secure by extra sticks and ties, water them freely, and do not permit them in any way to be overgrown by other things.

Hardy Annuals that were sown, in most instances where they are still growing and flowering, will not require very much doing to them now. If any are extra thick and close in growth, they should be drawn apart and tied. By using a few sticks that are slight, and thus not likely to make much show, they can be held sufficiently secure in most instances. Those that grow extra tall, and thus are liable to be borne down by their weight, need more support; such, for instance, as the Sunflowers, which, if they are well cared for in this respect, will last much longer in good condition, as the wind has not that power upon them, causing one to beat against another.

Annuals that show signs of exhaustion, having nearly run their course, should be removed when their flowers are no longer attractive. It is better to see the ground bare than encumbered with anything unsightly; this, however, need not be the case in many instances, especially if a few spare plants are still in reserve in pots to be used as stop-gaps. Where time can be given to picking off the decaying flowers of some kinds, the effect will be all the better, as, indeed, it will be for the plants themselves. The Stocks are an instance of this, especially if they be extra double kinds, where one decaying flower will quickly spoil another. The central spikes, when exhausted, should be cut out; this will permit the lateral spikes to develop themselves in a better manner.

To late-flowering Annuals, such as Asters, some attention should be given by the end of the month: by that time those named will need some support, unless they are the dwarf-growing kinds. The flowers will soon make the plants top-heavy; and when once they are beaten down, and the shoots get crooked, it is not an easy matter to set them right again. Sprays such as previously recommended from old birch brooms will be useful for this purpose, and save the trouble of tying each one. An occasional watering will be desirable should the weather continue dry, and—in the case of Asters more particularly—a watch had better be kept against injury from fly. If the points appear to be crippled, and the leaves unable to expand properly, something

may be considered to be wrong; a dusting with tobacco powder will generally have the desired effect when used in the same way as recommended for *Chrysanthemums*. If slugs continue to be troublesome, by eating away the lower leaves, a slight dusting of soot and lime should be applied.

Pinks, Propagation of, etc.—These will now be going out of flower, and no time should be lost in increasing the stock in all needful cases. First remove all the old flower spikes, and then thin out the medium-sized shoots for propagation. Cut them away just below the lower leaves; this will, generally speaking, allow them to be of sufficient length for striking. Where there is an extra amount of leaves, a few of the lower ones should be pulled off; then gather up together all those remaining, and cut off about one-third of their length, and make a clean cut of the base. This will leave them in readiness for inserting in the soil, of which some little preparation is needful. It should consist of good loam, rather fine, and either coarse sand or road-scrappings in about equal proportions. If a hand-light or bell-glass can be provided for them, so much the better; in either case the soil should be pressed down firmly before the cuttings are inserted in it, and well watered afterwards. With these facilities success will be all the more certain, although a goodly amount may be struck without them. The cuttings should be put in about two inches deep, and the soil again firmly pressed down. Some shade will be advisable against the direct rays of the sun, but caution must be exercised in watering; if well watered when inserted, but little more will be required before they are struck.

The following are twelve good kinds of Pinks, and we recommended their cultivation where Carnations have not thriven so well as could be desired:—*Ascot*, pink and carmine; *Boiard*, bright red, extra fine; *Empress of India*, dark red; *Galopin*, rosy-red, large; *George White*, purple; *Harry Hooper*, reddish-purple; *Lord Lyons*, rosy-purple; *Mrs. Sinkins*, pure white, very sweet-scented; *Raphael*, rosy-lilac; *Rosy Morn*, rose; *Rubens*, dwarf and free habit; *John Ball*, dark plum. These can be purchased in good plants in the late autumn from the growers; they are generally sold in pairs—two plants in one pot of each kind. In favourable situations autumn planting would be desirable, but in others the spring would be preferable.

Gathering Seeds for Ripening.—In the case of any special kind of flower that it is desirous to retain the seed of for future sowing, note should be taken of the best and most promising seed-pods when they are observed to be swelling-off. The

smaller and more weakly pods should be removed, to throw all possible vigour into the others. The pods will need watching when they are ripening, and should be gathered just as they are found to be matured; in some instances, if not taken in time, they will burst, and the seed be scattered. Afterwards the pods or seed-vessels should be spread out thinly upon paper in the sun, and under cover against injury from wet; thus they will fully mature, and the seed can be rubbed out at leisure. Unless it is a special case, we do not recommend this seed-saving to be repeated for many seasons, in the case of any one sort of seeds. If done for several years, there is every probability of degeneration in the quality where the stock is limited to a small selection. When the seed is all duly harvested, and the refuse cast off, each sort should be labelled, with the date of the year also; for some will keep for three or four years, whilst others will not.

Mignonette in Pots for the Greenhouse.

—This well-known plant can be grown with comparative ease in pots, and when in flower will be found to be most useful for cutting to arrange with other flowers. Six-inch pots are the best for general culture; these should be well drained, and, if a little poultry manure is available, a slight sprinkling should be put upon the drainage. The soil should be loam of good quality, with either sand or road-grit added to it; and if a little old mortar rubble is to be had, that should be added also. After this soil has been well mixed together, the pots should be filled up to within a little less than an inch of the rim, using a rammer to make it as firm as possible, this being most essential in *Mignonette* culture. About a dozen seeds should be sown on this surface in each pot, afterwards sprinkling a little more fine soil upon the top, and pressing that down firmly with the hands. A good watering should be given, and the pots either placed in a cold frame or near the glass in a greenhouse; heat is not needed, but merely protection.

When the seeds are up and growing freely, the weakest ones should be thinned out where there are more than six good plants, that number being quite sufficient. After this, let them have plenty of ventilation. If in a frame, the light may be left off during the day; if in the greenhouse, a shelf is the best place for them. The chief point afterwards to be observed is that of watering. They should never be allowed to get dry; neither should the soil, on the other hand, be sodden with water to excess; a medium course, which is not difficult to attain, should be followed. If two or three sowings are made at intervals of about one month from the middle of July, a succession will be obtained

that will last into the spring. The best kinds to grow in pots are "Machet," a comparatively new kind, of French origin, very dwarf growth, and large dense spikes of a dark red; Miles' Hybrid Spiral has very long spikes, and is reliable as a hardy kind; Garaway's White has white flowers, and is a good kind for the winter; Golden Queen is of dense pyramidal growth, with spikes of an intense golden-yellow. These are all quite distinct and excellent for pots. As the plants increase in strength, some slight support with sticks will be necessary, or it may be done very well with small sprays.

Cinerarias and Chinese Primulas.—Where there is not a fair amount of convenience for raising these plants from seed, the better plan will be to purchase them in a small state. Some growers make a special thing of raising seedlings, and sending them out, when fit to put into small-sized pots, at a cheap rate per dozen or hundred. In the case of Primulas this is decidedly better than purchasing the seed, with all the risks of a successful germination to be considered. Cinerarias are certainly raised more easily than the Primulas; but when very young, they require rather close attention. If this can be given them, then we would advise sowing the seed at once. "James's" strain is one of the best to obtain; the plants of this kind are of dwarf habit, and have very fine flowers. As soon as the seed is sown, the pan should be covered with a pane of glass, to prevent rapid evaporation, and air gradually admitted as the plants gain strength. When the largest leaves of these young plants are about the size of a threepenny-piece, they should be pricked off as advised for other tender annuals; and when the leaves are as large as a crown-piece, they should be potted singly in small pots, and re-potted once or twice more, according to their respective vigour, later on. The soil that suits them best is good mellow loam and leaf soil—two parts of the former to one of the latter, and one part added of silver sand. They are of easy growth, and only require the protection of a cold frame until November, when they should be removed to a cold greenhouse, from which the frost is just excluded. Primulas thrive under nearly a similar course of treatment; they require, however, to be kept drier overhead, being disposed to suffer from damp; and they should be removed to the greenhouse by the end of September. In either case, if plants are obtained soon in July, they will make capital stuff by the autumn, to flower the following spring.

Window Boxes and Plants in Rooms.—The former, where filled and treated as advised in a former article, will now be growing freely; they

will consequently require more water, probably twice daily in hot weather. All the decaying and yellow-looking leaves should be removed, also all faded flowers. In the case of the Nasturtiums every seed-pod should be persistently picked off. Every little attention that can be given to regulating the growth will give a better appearance to the whole. The advantage will be already apparent in favour of plants turned out into the soil as against those that have been kept in pots; the latter will soon become exhausted, whereas the former will only have begun to be effective. A small amount of cocoanut refuse, if spread over the soil in the case of those turned out, would help to conserve the moisture, and prevent the surface from becoming excessively dry. Plants that are grown in pots, and placed in vases for room decoration, will also require more water now. If the surface of the soil is at all hardened, it should be carefully picked over; then add a little silver sand, and gently press it down again evenly. Give the plants every advantage as to light, without fully exposing them to the direct rays of the sun. Sharp currents of air should also be avoided—such as the windows and doors both open, and the plants in a direct line with the same. In the case of plants that are used to ornament the dining-room table, it is far better to keep these—when not in use—stood in or near the window, so that they get more benefit from the light than if left always upon the table. Those having foliage which can be conveniently sponged will be all the better for that attention bestowed upon them; it will remove the dust, and perchance a few insects also, if any are lurking about.

Chrysanthemums.—If all the plants have been potted into their final and blooming pots, as recommended, the most laborious part of the work has been completed. As they show signs of renewed vigour afterwards, more water must be given them; in the course of a few weeks they will take an abundant supply. Never permit them to become so dry as to suffer, of which they will quickly give indications by the drooping of the foliage. If this should occur many times, the lower leaves will turn yellow, and die off prematurely, leaving the stems bare and unsightly. A close watch still needs to be kept against green fly in the points, whilst in some kinds the developed foliage is liable to be attacked by mildew. This can be quickly stopped by dusting them with sulphur. The points of the shoots, when growing very rapidly, are extremely liable to be snapped off in windy weather; guard against this by keeping them tied to the stakes as growth advances. If the object of the cultivator is to obtain large flowers, all the lateral shoots which push forth from the main

stems should be persistently removed, by pinching with the thumb and finger, before they attain to any material size. During this month each stem will

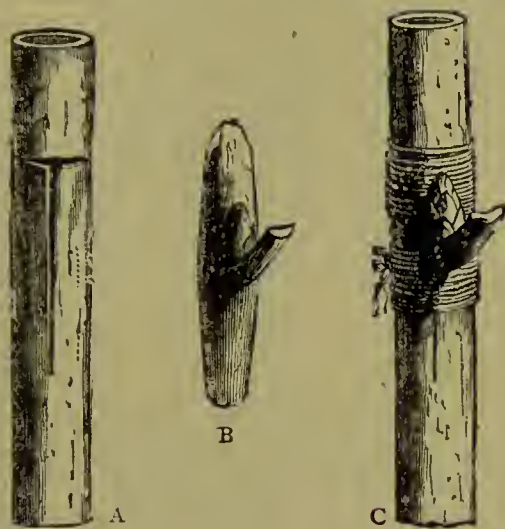


Fig. 1.

have branched off into three or more shoots from its top; as these grow, the same pinching of the laterals will be necessary, and they should be tied, more loosely than the single stem below. By this means all the strength of the plant will be concentrated in the main shoots, ultimately to result in much stronger and finer blooms. Keep all weeds pulled out of the soil in the pots, and slightly stir it at times if it appears to be at all hardened on the surface. If there is any appearance of worms in the soil, a little lime-water will remove them speedily.

Rose-budding.—July is the month for the increase of Roses by this process. Some preparation is necessary before the process of actual budding is commenced. Where there are more than three shoots on the stems of briars that are intended as standards in various heights, the weakest ones should be rubbed off, and all (if any) from the base of the stem. Then the spines or thorns should be removed for the first six inches of growth upon the young shoots, after which the budding may be commenced. In the case of dwarf roses, one bud only is generally inserted; and that should be close to the level of the soil, first removing some of the latter, about two inches in depth, around the stem. The same preparatory process is necessary with these as in the case of the standards. The material used for tying purposes in nearly every garden, and called “Raffia,” is the best binding medium to make all secure. “Budding cotton” is also used, but in our experience the former is by far the better of the two.

The next thing is to select the shoots that are to

be increased. A moderately strong shoot is better than an extra vigorous one; and the buds that are most prominent, but not started into growth, are better than the more backward ones. The best are generally to be found about the middle of the shoot, if it be a fairly long one. In selecting, the size of the shoot to be budded upon should about equal that of the shoot from which the buds are taken. Unless an expert is performing the budding, it is not desirable to take off more than sufficient to bud one or two stocks at the time. As soon as cut from the tree, the leaflets should all be taken off, leaving the leaf *stalk* only, about an inch in length, to protect the bud. Then the operation of cutting the incisions in the stock, close home to where it issues from the main stem, should be proceeded with. Those who are well used to the work often make only one clean cut, about an inch and a half in length; but others who are not so well used to it had better make a cross-cut, also at the farthest point from the stem. (Fig. 1, A.) In both instances every care must be taken not to injure either the bark or the wood underneath. If the stock is in good order for budding, the bark will separate freely from the wood. This part of the work should be performed before the bud is cut off from the shoot. The latter operation needs to be done with a sharp knife, so as to make a clean cut, commencing from below and cutting it off upwards. Then the small portion of wood that



Fig. 2.

has been taken off with the bud should be carefully removed, commencing from above the bud and finishing off at the base; this should part freely from the bark,

and leave it clean and ready for insertion. (B, Fig. 1.) In doing this latter part of the work, it should be pushed down as far as possible beneath the bark, and then tied in firmly with the material advised, avoiding in any way covering the bud itself. (C, Fig. 1.) When this has all been completed, the points of the shoots that are budded should be stopped; this will tend towards the bud taking to the stock more effectually. The illustrations herewith given will exemplify the operation of budding in a clear manner. In Fig. 1 (which is life-size) the T-shaped cuts are clearly shown; then afterwards the bud as it is cut from the shoot; and, lastly, the stock with the bud fully secured therein by the binding ties. In Fig. 2 (reduced) the briar forming the stock for a standard rose is shown with one bud tied and another one only just inserted. It is an occupation in gardening matters which we would recommend to all lovers of flowers, the rose in particular.

The Vinery.—The treatment previously given will still hold good as to watering, ventilation, and temperature. If the latter should range over 70° on sultry evenings, a little air should be left on all night at the top of the house. Lateral and sub-lateral growths must still be stopped, in order to divert the vigour mainly towards the bunches for the present; the berries in these will now have attained to a good size. Should they in any case appear to be rather too thickly placed, a few more of the smallest had better be taken out at once. Keep a close watch upon an attack of mildew by *daily* inspection; this is a most insidious pest when once it attacks the bunches, as it spreads so rapidly. It has the appearance of grey dust upon the berries, and may be easily detected. The best and most effectual remedy is to cover the pipes with sulphur, mixed with water to the consistency of paint, the pipes having previously been made hot. This should be done towards the evening, and the house kept close till the morning, and by the second morning afterwards it will have been killed.

The Greenhouse and Pits.—Close attention to watering is one of the chief points to observe now, and one is not so likely to err on the side of excess as on that of an insufficient supply. Most of the plants will now have well filled their pots with roots, and the most luxurious and free in growth and flower will be greatly assisted by either an artificial stimulant in the form of a manure, or liquid manure as obtained from a yard where stock is kept. The first-named is the more cleanly and pleasant to use, and in the majority of cases is to be recommended in preference to the latter. All decaying foliage and flowers should be daily removed; faded blossoms

often cause injury to the foliage upon which perchance they may fall. Occasionally the staging, &c., underneath the plants should be brushed down. At such times an alteration in the arrangement may be easily effected, that will afford variety, and probably at the same time be better for the plants. Any needful support to the branches of the plants should be attended to in time, especially when they are in flower, and likely to be borne down with the weight. This can be frequently done with tying material only, by passing it first around a stronger branch, and then to that which needs support; thus any undue disfigurement by an excess of sticks will be avoided.

Pelargoniums that have had water withheld from them for a week or two may then, when dry at the root, be cut back somewhat hard, so that a bushy compact plant may be formed. If any sort is scarce, and an increase desirable, some of the best shoots may at once be taken as cuttings, and inserted in the open border in sandy soil without shade of any kind. By the autumn they will have formed nice little plants, without hardly any trouble. The old cut-back plants need not be watered until the young shoots appear, and then even but sparingly for the first few weeks. This work should all be done by the end of the month. Do not on any account omit to cut these fine large-flowering Geraniums back, or next summer they will be very tall, gaunt-looking plants. If the weather should be unsettled, and much rain threaten, the cold frame or pit would be the safer place for them, removing the lights on fine days. Any young plants, for which just at present there may not perhaps be room in the greenhouse itself, can also be grown in the same place, with considerable advantage to the plants themselves—by more exposure to the light and air, which is conducive to a sturdy growth.

Layering Strawberries.—As soon as all of the fruit has been picked, this mode of increase for new beds should be seen to, so as not to lose any time. In an ordinary way the young plants formed upon the runners strike root into the soil, and thus partially establish themselves. These can, when large enough, be lifted and planted; but their progress is not nearly so satisfactory as in the case of prepared plants. The better way by far is to select some good leamy soil, and fill up as many small pots (those of three inches' diameter are preferable) as there are plants required. The soil in these pots should be pressed down firmly, but not watered before all the work is done. When these are ready, the strongest runners should be selected in sufficient numbers to fill the pots, one to each pot. By means of a small peg each young plant should be secured

firmly upon the surface of the soil, into which it will quickly take root, and progress far more rapidly than those that are left to themselves. After the desired number has been secured, all the rest should be cut off the plants, in order to concentrate the strength into those that are layered. The young runners that extend beyond the latter should in every case be cut off close to the pot. Watering should be seen to once a day—not so much being given at first as a little later on, when they are filling the pot with roots. In about three weeks or a month they will have established themselves in these pots, and be fit for cutting off from the parent plants that sustained them in their earlier stages of existence. When this is done, all the pots may be stood closely together, and kept well watered. A rather shady spot will be the better for them until the new ground is prepared for planting. Of this we shall treat in the next chapter, on seasonable work for August.

Summer Pruning of Fruit Trees.—The shortening of all superfluous growth should be seen to towards the end of the month. This will admit more light and air into the trees, and be the means of assisting the fruit in swelling off to a larger size. This summer pruning, as it is termed, should not be a severe one, and due allowance must be made for all trees that are still in a process of extension. Those that have reached their full size will not probably be so vigorous as the younger ones, and, therefore, not so likely to burst forth into a fresh growth, which is not at all desirable. With such trees as these, about three-fourths of the summer growth may be removed in safety, leaving the rest until the winter pruning. As a guide to the best time for doing this work—amongst Apples and Pears in particular—note should be taken of the condition of the growths. If the points show a cessation of the formation of leaves, and appear to be swelling up, a bud upon the tip of each one, that may be taken as a good criterion that the work may be done in safety. Cherries and Plums will be the first to be operated upon; the former, in fact, may need to be attended to in June. The young shoots that are thus cut off the trees should be stripped of all their leaves, and then tied up tightly in a bundle, to be laid aside to dry off and stiffen, when they will make excellent sticks for many purposes, chiefly for pot-plants, generally lasting well.

Fruit for Preserving.—When this is the object in view, it is better to allow the fruit to fully mature upon the trees or bushes, but never left any longer, so as to lose in any way the freshness of flavour peculiar to each kind. It should be

taken just when at its best, and as much as possible when the weather is dry, and the fruit tree free from any moisture. Raspberries, for this purpose, should be put in hand as soon as gathered, for this fruit will otherwise rapidly lose its flavour. As soon as all fruit has been gathered, any that was hitherto protected from the birds, should have the nets removed, the latter being put away in the dry until again required for use. It is better to hang the nets up than to allow them to lie about, with the risk of being torn or injured.

Tomatoes.—These—where planted out in good time—will now be swelling off and maturing their earlier fruits, with others advancing. A liberal amount of water should be given, to prevent the plants from in any way suffering. With the increased weight of the swelling fruit, every needful attention to the support of the shoots should be given, to prevent them from breaking down. Superfluous growths, upon which there is not any prospect of fruit ripening, should be cut away; and in any case where the foliage is still thick, half of each leaf may be removed. When the fruit commences to show colour, it should be fully exposed to all the beneficial effects of the sun's rays; no danger need be apprehended of injury to the fruit by scalding from this source. As the fruit ripens, it should be picked. If not immediately wanted, it can be laid aside in a cool place. The energies of the plant should be directed to the ripening of the remaining portion of the crop.

The Cultivation of Mushrooms.—Where the requisite amount of stable manure can be obtained during this month, it may be turned to an excellent use in this direction. It does not follow that a large amount is necessary, though, as a matter of course, the larger the quantity the better are the prospects of a future crop as to its utility. The manure should be shaken out, so as to separate the greater part of the straw or litter from the droppings; short straw is no harm, but rather to be preferred. After this has been done, the finer parts, of which the bed is to be made, should be turned over for a few days, until the rank heat from the fermentation is past. Then it is termed "sweet," and fit for making up; but, before that is done, we advise that a little soil be mixed with it, to about one-twentieth of its bulk. The produce from such a bed will be of a more fleshy character, and in many cases finer also. If no convenient place under cover is obtainable, the bed may be made up out of doors, in a spot where water does not stand, so as to saturate it. Such a bed should be broad at the base, and in shape like an ordinary roof, so as to throw off the wet. It should

be made up as firmly as possible, by treading and beating. When finished, a stick or two should be thrust into the bed, so that the temperature can be ascertained; or a still better and safer guide would be a thermometer.

When the heat is at about 85°, with no prospect of its advancing any higher, the spawn should be inserted, in pieces about the size of a small hen's egg, and at about one foot apart each way. For this purpose holes of about three inches deep should be made with the hands, being afterwards filled in, and all pressed down firmly. Should the spawn be very hard and dry—in which condition we prefer it—it should be soaked awhile in warm water, about the temperature of the bed. This will set it into action more quickly; or, in other words, cause it to “run” or permeate the bed. In a few days the entire surface should be covered over, about one inch in thickness, with good leamy soil, rather moist, and afterwards well beaten down to a smooth surface. The bed should then be covered with the long litter shaken out at the commencement—this should, in fact, have been kept upon the bed, from the time of its formation, when not actually being worked upon. If the bed can be made up in a shed or outhouse, it will be all the better, being thus protected against any inclemency of the weather later in the year, when in a bearing condition. In such a case so much covering is not necessary; but it is always best to have some upon the bed, to prevent its getting too dry on the surface.

Where there is sufficient room to spare under cover, it is a better plan to make the bed flat, and about fifteen inches in depth all over. These protected beds will at times require to be watered. This, when needful, should be done with water about the temperature of new milk, and be distributed over the surface evenly and steadily, by means of a fine rose upon the water-can. Sufficient water should be given to penetrate well into the bed; then a repetition will rarely be necessary.

About eight weeks after the bed has been spawned, the young mushrooms should commence to appear, and will soon be fit for picking. Each one, when large enough to use, should be gently twisted round, and removed with the stem entire. This is far better than cutting them off, and thus leaving the stem in the soil to decay, which it will quickly do. As to the size of mushrooms when taken from the bed for cooking, there is a difference of opinion and taste. We advise a medium course in this respect. Neither use them too small (when termed “buttons”), and thus considerably more are required for cooking purposes; nor leave them till they attain their full size, when they soon lose their flavour. In the first case there is a waste, in the latter the bed

will be sooner exhausted, and some of the backward ones be found to have died off, having turned soft and assumed a darker colour.

Mushrooms may also be grown in cellars; but unless all the communication be from the exterior, so as to prevent any of the smell from the manure ascending into the house, it is never advisable to attempt this mode of culture. They may, however, be grown in frames very well indeed; for instance, the frame or pit previously advised for cucumbers would do very well. In such a case some of the spawn might, towards the end of this month, be inserted in the soil, and all pressed down firmly. No more attention will be necessary beyond the usual treatment accorded to the cucumbers for the time being.

Cucumbers in Frames.—The previous advice should still be carried out, but more watering will be needful if the weather is very hot. Remove any yellow or decaying leaves, with the footstalk entire. Should any mildew be seen upon the foliage, dust at once with sulphur. This remedy will also check the red spider, a very troublesome little insect if left too long to itself. If there is any tendency of the growth becoming too thick, the weakest shoots should be removed, and some of the older foliage, even if in fairly good condition. When this is being done, a few more pegs should be used for those shoots that can be pegged down into the soil. During very hot weather it is a good plan to leave a little air on at the top of the lights all night; this will assist in strengthening the plants, and sustain them in going through the heat of the day with less symptoms of distress.

Kitchen Garden.—July is an important month in the vegetable department, for by the end of the month every available space should be cropped, and all plans made for the coming winter. As soon as one crop has ceased to be remunerative, remove all semblance of it, and do not let anything draw the nutriment out of the soil one day longer than is really necessary. This is often the case, however, in very many gardens, even where otherwise well managed and cared for. Take, for instance, Broad Beans. As soon as the last pod has been gathered, the stems should be pulled up and thrown away; so also should the stumps of the Cauliflowers when the heads are cut. If a prolonged period of dry weather ensue, some watering will greatly benefit such crops as Scarlet-runners and French Beans; Vegetable Marrows also enjoy a liberal supply of water. In the case of root-crops it is not so important; these generally hold out well.

Young cabbage plants should be planted, in suffi-

cient quantity, close upon the heels of the crops that have been removed. At this season of the year it is not necessary to dig or fork the ground for these, if it was well cultivated in the preceding spring. All that is needful is to hoe the surface, and then rake it over, to remove all weeds and rubbish; then draw drills for the plants one foot apart, and plant the cabbages, one foot from each other, in the rows, well watering afterwards. The best kinds to plant during July and August are the Green Colewort and Little Pixie, from seed sown during May and early in June. Any gaps in crops planted during June should be made up—such, for instance, as in the autumn Cauliflowers, Brussels Sprouts, Broccoli, and winter Kales. The Celery will need attention, to prevent any serious harm being done by the celery fly, which deposits its eggs on the leaves, the larvæ from which penetrates into the leaf-tissue, and causes brown patches, as if the leaves had been scalded. When this is seen, these spots in the foliage should be pressed, between the fingers and thumb, to kill the insects, and a strong dressing of soot applied to the foliage. If the celery is kept well watered in dry weather, it will often tide over an attack of this insect more effectually.

Vegetable Marrows, when disposed to make long and strong shoots, should have the points pinched out, to form back-breaks, and more fruit, though not perhaps so large. Marrows are of more delicious flavour if cut quite young, when no larger than a good-sized potato; it is quite a mistake to imagine that size imparts any superior quality to this edible

gourd. Supply them with water freely in dry weather; and if there is any cut grass from off the lawn at disposal, some should be laid upon the ground, close up to the stems of the plants. This will keep the ground moist, and the young fruits clean, with less danger of being injured by slugs. Some more Parsley seed should be sown, by the middle of the month, in a sunny spot; this will stand the winter well, and come in useful the following season, when that which was sown earlier is about running to seed. Some Spinach seed, if sown at the end of the month, will yield a good crop for the autumn. No special preparation of the ground is required, for a luxurious growth is not desirable. The latter has a great tendency to run to seed. Cabbage seed, to provide young plants for spring cutting, should be sown in the third week of July. Two sowings of Lettuce ought also to be made; the later one will supply a most useful lot of plants for autumn salading. Turnips, too, should be sown for the same object—*i.e.*, autumn use. After a shower of rain this vegetable will germinate in a more reliable manner. Keep watch, however, against the depredations of the small birds—chiefly the finches—and contrive something to scare them away; also make the young plants disagreeable to their taste by a dusting of soot and lime. Where Asparagus is grown, the beds will now be improved all the more by a dressing of salt, of which enough should be applied to give a whitish appearance to the soil; this will also check the growth of weeds for the rest of the season, and be a saving in labour at the end of the year.

RIDING AND DRIVING.

It would not be easy to over-rate the advantages derivable by dwellers in the country, in villages, or even in the suburbs of large towns, from the possession of a handy conveyance and a good useful horse, or even a sturdy pony. We do not attempt to enumerate these, for they will readily occur to any one who gives the subject a thought. They are mostly those of utility and pleasure combined, but they include also some of the benefits that accrue from being able to live in a quiet and healthful locality, apart from the din and bustle of city life; and one of these certainly is cheapness. In the country, or in country hamlets a few miles perhaps from a station, one has no heavy rates and taxes to pay, and the rent itself is seldom more than half what must be disbursed in towns. For that small rent, too, one has double the conveniences. There is the garden, for example, to say nothing of

the fowl-run; and neither eggs nor vegetables bought in a market seem half so sweet and fresh as those gathered at home. Then, in the country, there are now and then the undoubted pleasures of a day's shooting or fishing, when one can spare the time, with occasionally a forenoon in the hunting-field, carried, perhaps, by the self-same roadster or hack that does duty in the family conveyance. Probably, the railway station is within an hour of the great busy city where one's occupation lies, in which case the drive to the train of a morning may generally be pleasant enough, and is always exhilarating and health-giving. If one has to visit the market town, or if friends are arriving by train, then once more the carriage comes in most handy. On the whole, life in the country is more agreeable to very many of us than life in towns, while it is, undoubtedly, more healthy; especially so—both morally and physically

—for young folks. What we would point out is that, if only business hours will allow, for the amount of rent and taxes saved by living thus in semi-retirement one can usually afford to keep a “trap,” as it is called, and a boy as well to look after that and the horse.

As to riding, with the exception, perhaps, of cycling, which is certainly attended with less trouble, there is no better or more healthful exercise to be obtained than on horseback, more particularly if one can remember that the beast he bestrides is a sentient, thinking animal, that knows and can really appreciate proper treatment, and when horse and man are *en rapport*—in touch and feel, as it were—with each other.

Riding.—For a small family living in the country or suburbs, the horse kept should be one that can be made generally useful, alike in saddle or harness. Perhaps, in addition to this animal, there may be a children's pony. In any case, one must be able to ride well and with ease, else half the pleasure that may be obtained from keeping a horse is lost. But the art of equestrianism is certainly not acquired without some considerable care and practice. The younger one begins to learn, the better. Indeed, a boy may succeed in becoming a fairly good rider without any lessons at all, though he will also probably acquire at the same time some bad habits, which are more easily learnt than lost.

It becomes a question, then, how the young may best be taught. The answer to this might, undoubtedly, be given in two words—“Riding School.” Next comes the question—which is one for the individual—how about the expense? This is not difficult to get at. In almost every town or city of any size, there is a riding school or riding academy of some sort, and we are not aware that the fees differ a great deal in any. We give, then, those of, say, a first-class institution in London, premising that they will be somewhat cheaper, rather than dearer, in other places. To begin with: the hours of instruction are from 9 a.m. till 9 p.m., and tuition given on every week-day. Ladies' habits may be hired either for school use or for wearing on the road. The instruction given is of the most practical sort possible, and nothing is omitted that may tend to turn out a pupil

as a really good rider, and that, too, in as short a time as may be. Nevertheless, before going for instruction to one of these schools, it is a good plan to have had sufficient practice with horses and riding to have gained confidence. One should have lost all fear, and obtained a fairly good seat. A lesson or two from any groom or coachman at home will secure these advantages, and in such a case the time spent at the riding school would be, practically, in getting finishing lessons.

We give this advice because the fees will usually be considered high, and it is but right all the instruction obtainable should be secured while one is having the lessons. And we may add that if a young person of moderate nerve and agility, who really has seen and handled a horse previously, attends a riding school, it is really marvellous to what an amount of perfection he or she may attain with even a dozen lessons—not forgetting, however, the private

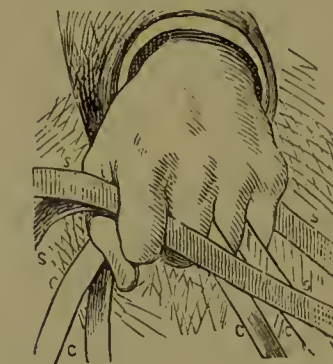


Fig. 1.—SNAFFLE.

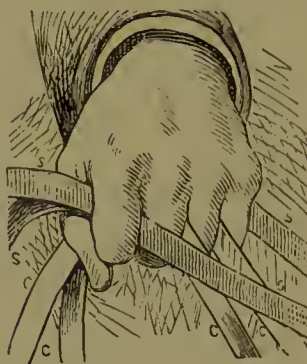


Fig. 2.—SNAFFLE AND CURB.

practice in the interims. These twelve lessons will cost two guineas—six about one guinea or a little over, and each single lesson five shillings. This in the school. But in addition to these lessons, or to a month's subscription at £2 10s., a few afternoon rides with the riding master will be most beneficial, and these will probably cost half a guinea each. The hire of the master's horse is also charged for; but as there are, on such occasions, usually a party of equestrians, this does not come to very much for each rider.

Lessons in driving are considerably more expensive. Thus, one lesson costs from seven-and-sixpence—single harness—and a course of twelve, about four guineas. If the lessons are for double harness—that is, with two horses—it is just double, although tandem is taught for the same fees. So much, then, for the riding-school lessons; and unless a lad or maiden has the advantage of thorough private instruction—which is, of course, often the case in county families and others, where the father is probably a first-rate horseman, and the children grow into horsemanship almost from the cradle—we cannot commend them too highly to any one desiring to acquire thorough horsemanship, and who wishes to ride or drive in a way that shall be pleasant personally, and pleasant also to others to look at. For, really, unless one can confidently feel

that he is riding in a becoming manner, he is never perfectly at home, either in the Row, or at a country meet of hounds.

Learning to Ride at Home.—In or about every village some one is sure to be found who, for even a trifling consideration, will superintend the first attempts of a juvenile in mastering the art of riding. The plan of putting a lad on a quiet horse with the pad on, but without the stirrups, has a good deal to be said in its favour. A boy thus gains confidence; and even if he slips off a few times, it will but tend to give him additional courage. He should be taught to keep his toes in, to grip with his knees; indeed, having no stirrups, this he will be *obliged* to do. He must be taught to hold the reins steadily, but with a light hand, avoiding jerking, the body moving in a give-and-take way to each motion of the horse. Single reins are held ordinarily as in Fig. 1.



Fig. 3.—HANGING BY THE REINS.

When the curb also is used, Fig. 2 shows the proper arrangement, *c c* being the curb reins, and *s s* the snaffle. Before mounting, he should be taught how to handle the reins; for a bad habit may thus be nipped in the bud, or never even fallen into. A boy will have to be assisted into the saddle if the horse is a tall one; but he may learn to ride as well, if not better, on a pony. In mounting, the left hand is placed on the pommel, the left foot in the stirrup—if stirrup there be—then a spring from the right foot enables one to secure the seat.

At first, walking practice is best, and without stirrups, for the muscles that secure a good grip are thus exercised and enlarged, and this is half the battle in learning to ride. Having secured this latter advantage, the stirrups may next be used; and the length of these has much to do with a good seat and comfort in riding. The proper length will not be difficult to determine, if the rider has already mastered the grip. Until he has done so thoroughly, the stirrups should on no account be used, or he will depend too much on them, and probably never become a proficient horseman.

The method of holding or using the reins under

different circumstances, is only to be acquired by personal teaching and practice; but the young rider should remember that he is not to depend for *support* on the reins, as in Fig. 3, which represents the Epping Forest "Arry" style, alike disgusting to the public and torturing to the horse. The reins are meant to guide and check; a good grip and good seat being the essentials of support. A proper seat is of the utmost importance, and should be early taught. The rider, if properly seated in the centre of the horse's movement while in action, will have far less chance of being thrown in any case, and will be better able to accommodate himself in a gentle and easy way to the motion of the horse. A non-erect carriage is a great fault in riding, equally with an insecure seat. When a horse falls after stumbling, it is, as often as not, the blame of the rider, and may in a great measure depend on these two faults just named.

After the rider has mastered the reins, learned and well practised the grip, has a secure seat, and an easy and graceful carriage—upright and square, though not stiff, the body playing gently from the hips to the motion of the animal he bestrides—and after he can walk or canter, he may learn to trot. This is more difficult; and the fault especially to be avoided is that of bobbing in and out of back and stomach. In trotting, the motion must also be give and take; and the carriage, that of ease and elegance. One may learn a good deal about this by noting the action and movements of really good horsemen, though, of course, only practice can bring one in any way near to perfection.

A Day with the Hounds.—Until one has acquired proficiency in the art of riding, he will not think of going to a meet; but if he lives in a suitable neighbourhood, and owns a fairly good roadster, many a day may be very pleasantly spent with the hounds. The first outing of this sort will be the most trying; but the ice once broken, matters will seem much more easy than was at first expected. If possible, a few lessons should be taken in a riding school, or from a master, before one makes his first appearance in the field. Ridicule is not easily borne by a grown-up person, and it may as well be avoided. As to a boy, as soon as he has learned security of seat and a fairly good carriage, he may take his pony to a meet. If he falls, he will hardly hurt himself; and experience will soon teach him many a useful lesson. One must ride with care in the field at first, and never be foolhardy. He should never use his spur much, if at all; nor take too much in a day out of his horse. Unless he is very well mounted indeed, and a good rider as well, he should not trouble about being "in at the death."

Some horses have a disagreeable habit of getting the bit in their teeth, as it is called; in such cases a lip-strap is necessary. A shying horse should be gently soothed, and quietly faced round towards the object that has frightened him, which may, for example, be a tricycle standing by the wayside, or a barrow. Some horses will shy at gates, others at dogs; but there is only this one sensible way of getting them over it.

Should a horse bolt, there is a minimum of danger so long as one sits still and keeps his presence of mind, trying to restrain or stop the animal; or if this is impossible for a time, trying at least to guide him, and as far as possible putting him up hills. In riding home after a long day with the hounds, one should be most careful not to allow his horse to get chilled, especially if he be tired. On arriving home, carefully stable him; but although a rug may be put on, the ventilation should be attended to. A hot stuffy stable is most injurious to a tired and jaded horse.

Driving.—Driving is one of those arts that most people think is easily acquired. So it may be, if a few lessons are taken at the commencement, and bad habits carefully avoided; but driving does not come naturally to any one. It is a most essential part, however, of the education of almost every person who aspires to be anything in the world; and, indeed, no one should possess himself of a horse and trap without learning personally something about driving, even although it may be his



Fig. 4.—DRIVING-SEAT.

intention to keep a lad or coachman for that purpose. It will usually be sufficient if one knows how to drive fairly well in single harness.

To begin with, the would-be driver should learn *how* to "hold the reins." He should know when his horse is properly harnessed, and be able to harness

or "put to" himself. He should take a look at things before gathering up the reins and mounting; and when in the trap, he should keep a good seat—that is, he should sit erect and square to the front,

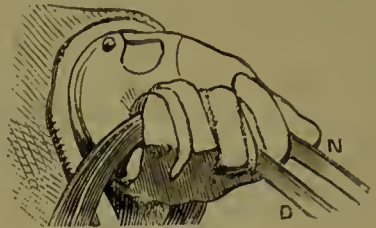


Fig. 5.—THE REINS.

in an easy position, but in such a way as to have proper power over his horse. For this purpose the driver's box should be rather above the level of the horse's head, and the legs not gathered up. (Fig. 4.) In choosing small traps, one should, for this very reason, prefer a welled one, so that the knees may not be bent up towards the chin. The reins must be held with a good commanding grasp, and the play of the arm be from the shoulder, not drawing the rein-hand up towards the chin when checking the horse, as one constantly sees bad drivers doing. Fig. 5 gives the arrangement for ordinary single-harness driving, with a steady horse whose reins can safely be held in one hand, *N* being the "near" (left-hand) rein, and *D* the "off" rein. The palm is held uppermost, and the grasp of *all* the fingers clenched upon the reins tightly; but this clench must have no "pull" upon it from the arm, except when this is necessary. The start should be made gently and easily; if speed has to be attained, it had best be so after the animal is fairly on the road, and beginning to warm to his work.

A good driver is invariably a careful driver. He will not stress his horse; he will never jerk or saw at the reins; he will have his nag's comfort and welfare constantly in mind; he will be careful in turning corners, especially where houses are; he will have an eye to the roads, and not rush madly over a rough, stony, macadam path, to the detriment of the animal's feet and joints, and danger to the carriage springs. He will use the whip but little—a good horse needs no whipping, a bad one is not worth buying a whip for. Indeed, a whip should be used more in caressing a horse than in flogging him. The good driver will keep a good eye in front for vehicles, and a good ear behind; and if he has to pull up in a town, he will raise his whip-hand to warn those behind, and so avoid collision: he will, in the country, drive gently down hills, and let the horse have his own way going uphill: he will choose the best route, when driving in a

town, rather than the shortest; and, when meeting another trap, he will allow plenty of room rather than try to shave his neighbour's wheel too closely. He will, moreover, over drive with a gentle hand, yet ever feel in touch in case of a stumble; and it is almost needless to add that he will keep his own side, driving to the left when meeting a carriage, and to the right if he has to overtake and pass one. There are many other little odds and ends which experience on the road, and that alone, can teach the driver.

Choosing a Family Horse.—We shall, in choosing a horse, most likely have both riding and driving in view, or we may merely want a good useful animal to trot along our conveyance. We must be guided, in the first place, by the kind and weight of the carriage or trap; and of this we shall speak presently. But supposing it is a kind of phaeton or four-wheeled vehicle to accommodate four, or four in addition to the lad who occupies the box. In this case we cannot err in buying a hack or roadster, about fifteen hands high, or even somewhat less—fourteen two. We should not be inclined to recommend a foreigner: as a rule these beasts have no manners. A home-bred hack is the thing, or a Welsh. The Welsh horses, although not perhaps very good hunters, are fairly good all round. They are willing and satisfactory on the road, and they are sure-footed. Moreover, they are possessed of good constitutions, and hardy—two great advantages in a family horse.

There may be cases, however, where one thinks as much about hunting as driving. An Irish horse then is a useful one, and makes an excellent hunter. Home-bred horses from a pure blood sire are also great favourites. What we want really is shape for speed and staying powers, with the capability of weight-carrying. The height may be from fifteen to sixteen hands, and the animal should not be hunted until he is six years of age. Perfect shoeing, it may be added, is a *sine quâ non* in a good hunter, and good qualities have to be paid for.

For a useful sort of hack or nag, we should choose a long and low cob, not thick in the shoulder, with smallish head, good, strong, well-formed neck, and deep chest. Although this horse should cover plenty of ground as he stands, he should be short in the back or coupling—that is, the saddle should almost cover the back part—the rest, before and behind, being good shoulders, long and sloping, and good quarters; the hind quarters should be wide and strong and full: the belly deep; clean, well-let-down hocks, short pasterns with plenty of bone, and flat sinewy legs. We should, while choosing, look less for beauty than for evidence of utility and capability of

working. We should not mind him being rather small, and we would in some measure judge by the animal's expression. We would certainly not purchase a lazy-looking horse, with a heavy head, small eyes and nostrils, with large ears; nor a thick-skinned, hanging-bellied horse, too hairy in legs. We should look for appearances quite the reverse of all these.

In purchasing a pony, we could hardly beat the Welsh for general good qualities; and in our choice we may be guided by much the same rules as determine us to make up our minds in buying a hack.

Examining a Horse.—It cannot be too strongly advised that before purchasing a horse of any kind, even a pony, the would-be buyer, who does not feel himself competent to judge, should get the assistance of a friend who really knows a good horse; and if that friend be a qualified veterinary surgeon, so much the better, for he will then not only see that the animal is of good conformation, but sound in wind and limb, and free from fault or blemish. Even a horse's temper is to be found out and considered before he is purchased; and one that is not steady, and to be depended upon, is of very little use to a country family. He will be a constant source of worry and anxiety, instead of a comfort.

But, independent even of the vet., one may have one's own eyes open while the examination is being made, and ears as well as eyes. The best time, then, to see the hack which one has thought of purchasing is in the morning, before the horse has been exercised at all; for if he has already been out for a smart run, any swelling or stiffness that at rest might have been apparent about the legs or feet may have to a great extent disappeared. Before having the animal out, it will be as well to notice him quietly in the stable for a time. By this means—and in a great measure perhaps by the actions and manner of the groom, who generally has an interest in selling—one can tell whether the hack is a crib-biter, or has a cough, &c., and also whether he is touched in wind or not. The respirations should be slow, quiet, and even, about six or seven to the minute, and with a regularly rising and falling flank. The mouth should be cool, and there ought to be no signs of running at the nostrils, nor extra colour therein. During this quiet stable examination, one may also be able to tell, by the actions of the groom while going up to him, rubbing him down, or looking at the fore and hind feet—which he should do in one's presence—whether the horse be vicious or not. A horse that shows the least signs of vice, whether by restless nervous manner, by a laying back of the ears, or by an attempt at kicking, should not be bought at any price. The horse should be led quietly out of the stable, and

should be seen standing for a time. If he be "groggy" on the fore legs, he will bend a trifle at the knees, especially if touched behind them; he will rest more on the toes, with the hind legs well under him. A horse of this sort should not be purchased on any account.

If the horse's eyes be bright, if the nostrils inside be neither red nor too pale, and at the same time free from discharge, if his breathing is regular both in expiration and inspiration, and if he shows but little signs of restlessness or trepidation, we may presume he is in fairly good health. His general condition and appearance of skin will guide us further; and if we suspect cough, squeezing the wind-pipe slightly will usually bring it on.

We think that further than this cursory examination of the horse by the intending purchaser himself, he should trust everything to the veterinary surgeon. He, at all events, will be well acquainted with the many devices—honest and dishonest—that unprincipled dealers resort to in order to make a horse look his best and secure a sale. But, over and above the examination, it is far the best plan to have the horse on trial for a few days, or even a week. For this the dealer will expect to have remuneration as a matter of course, but it will be money very well spent indeed. It is as well to know something of the dealer also, as well as the horse, for even a warranty—without which it is unwise to conclude a bargain—will be of little use if the seller be a man of straw. Another thing is this: inquire about the kind of feeding the horse has had. He may just have come off the grass; and if so, a too quick change to oats thrice a day would be really dangerous.

The Price of Horse or Pony.—This depends a good deal on where or from whom one buys. Farmers very often charge somewhat dear for horses. They will, as a rule, rather wait than let an animal go under a good figure. Animals that you see advertised in the cheaper prints are seldom worth looking after. And as for sales—one has really to "gang warily" at these; for dealers are invariably there, and if they see a stranger bidding, they have a way of bidding against him till they run the horse well up, and then letting him slip at this high figure into the amateur's possession. Probably it is as good a plan as any to buy from a regular and respectable dealer. They cannot afford to keep horses to eat their own worth, and will part at a moderate price rather than not sell for some time.

One ought to be able to buy a really serviceable hack for, say, thirty pounds upwards, though, of course, the price of horses is continually fluctuating, and at the lower price one does not expect an animal with all the qualities we have named. For a Welsh

pony of, say, twelve to thirteen hands, and well broken, ten pounds would be a fair price. Neither hack nor pony ought to be under six years of age, but with ordinary care and good feeding he ought to last for a score of years, or even more.

Carriages.—The kind of conveyance one has for hack or pony is to be well considered. There are very many different styles of vehicles, and we have to think, before purchasing, which shall best suit for family use. Of course, much depends upon the size of the family, and whether a driver is to be kept or not. Among the handiest, and even handsomest, of these is the phaeton. For quick work and long distances in the country there is probably, however, nothing to beat the dog-cart. It may be a large four-wheeler, or one somewhat smaller, with only two wheels. It is handy when one wishes to drive oneself, or to take a small party. The driver sits well above his horse, and has, therefore, plenty of power. A *vis-à-vis* dog-cart, with a glazed top part for rainy weather, which turns it quite into a little coach, is an excellent contrivance for the country, although, when the top is up, elegance departs. For a very small family, where a man to drive is kept, a hansom is a comfortable and most elegant carriage. But we should recommend one of the newer-fashioned ones that have doors or a door opening at the back. This is far better for facing weather of all sorts. The gig, which is now rather out of date, except for professional men, who have to make quick journeys to patients or clients, is a very speedy and far from inelegant conveyance, and it has the merit of cheapness. It is, moreover, very light, and quite a small horse can easily trot it along. A waggonette is a very handy contrivance, and well suited for a small family. When there are children, one may go marketing, or picnicking, or anything else in the waggonette. Then last, but not least, as regards comfort and convenience, comes the pony-trap, as it is usually called. It may be of any size, and almost any shape, and may be built of wood or basket-work. Some carriages are made of stained wood, and really look very nice, and retain their new-looking appearance for years if properly taken care of.

Buying a Carriage.—There is in almost every town in the country a wheelwright or carriage-maker in a small way, who can usually turn out a very excellent article—say, a waggonette, gig, or village cart—at a very reasonable rate, and one might do far worse than employ such a man, if residing in the place. As the carriage is not meant to go out of the district, it is unlikely he will do other than his very best to please his customer: and so wood-work,

springs, varnish, and all, will do him credit. If money is no object, of course one may go to a first-class carriage-maker in the nearest large town or city, and pay a first-class price. The profits in the trade of carriage-building are very handsome. One finds this out, to his sorrow and chagrin, if, having bought a beautiful conveyance at a very long price, he is compelled to sell it again, though, perhaps, not a whit the worse for wear, about six months afterwards. Expensive traps are so sold constantly, and this is just the chance an intending purchaser should look out for. At establishments in towns, every week good carriages are sacrificed for a nominal price. They have to be got rid of, must be sold, and so they go. But although buying a carriage is not so precarious a business as buying a horse, it should not be forgotten that many old conveyances, whose bottoms are sometimes almost out, and springs weak and worn, are puttied up, painted and varnished to look almost like new, and so put into the dealer's hands for sale—at a bargain. It is a bad bargain, as the buyer soon finds out.

As, therefore, there are so many of these "flat-catchers" in the market, it is well, when going to buy a second-hand carriage, to be accompanied by that best of friends—the man who knows. He will thoroughly overhaul the conveyance, and it will be difficult indeed to deceive him, for, however well an old carriage may have been renovated, there is always something about it that tells a tale. Carriages of almost every class are frequently found to be advertised for sale, in the exchange columns of many of the cheaper popular prints. Sometimes a bargain may be picked up in this way, but not often; for if the vehicle be sent for approval, the would-be purchaser must pay the railway rate, and it is not likely, after all, the article will suit. So, on the whole, it is best either to visit a dealer's, where there will be many different kinds of carriages to choose from, or have one built; and this latter is the best, though by far the dearest plan. As to price, this will, of course, vary with the condition. But a good dog-cart should be had for twenty pounds, a phaeton for little more, and pony carriages at any price betwixt five pounds and fifteen.

The Harness.—This is another important consideration; and if one means keeping a carriage for any length of time, it is really best to have it made to order by a respectable tradesman. A good, useful, strong set of harness may be had for from four pounds, although this will not include any very great amount of ornamentation. But buff-leather harness is really ornamental all over, and keeps its colour well for years, if it be properly cleaned and seen to. As to second-hand harness, the trouble is, that unless it be

really almost new, one never knows when nor where some portion may give way. Bargains, however, are often picked up, and the prices for good sets would be somewhat as follows:—Pony harness, about two pounds; silver-plated cob harness, that could not be bought new under eight guineas, about three pounds ten; riding saddle and bridle, in good condition, about thirty shillings. Young ladies' saddles of modern make would cost about the same price.

A very necessary portion of the harness is a good and well-fitting *bit*. It need not, as a rule, be compound, and should in no way be a punishing bit. The simple snaffle will generally be found sufficient to control the useful family nag. A horse that *requires* a curb bit, is but little comfort to any family driving every day. It should be remembered, always, that very great cruelty can be inflicted on a good and willing horse by the use of badly-arranged mouth-trappings. Another piece of harness sometimes used is the bearing rein. Although some may write in favour of it, we think it will seldom, if ever, be found a necessity for either a pony or hack: and, indeed, used as a portion of the trappings of any horse, it is oftentimes an article of great cruelty.

Care of the Carriage and Harness.—A coach-house should be a dry and weather-tight room, with a boarded floor. This floor is so arranged that air can circulate freely beneath it, and the place should be ventilated, although this is seldom thought of. The house should be free from damp, and not too warm, else both the varnish and the wood-work are sure to suffer. Therefore tiles, slates, or—better still—thatch, should be used as roofing; certainly not wood-work or galvanised iron. Another thing to be remembered when building the coach-house is that it ought to be as far away as it conveniently can be from the stable itself, or the dung-heap; for the gases therefrom, notably ammonia, have a very bad effect upon the varnish and paint. The leather-work of the carriage requires to be frequently oiled and rubbed, to enable it to retain its suppleness and prevent rotting; the brass or other metallic work should be rubbed daily; and care should be taken that the iron-work, which is covered with paint, does not get denuded, otherwise it will rust, and be difficult afterwards to keep in good order. All the cloth-work inside should be kept carefully brushed and free from dust; it will be best to keep these portions covered up, while the seats may be taken indoors. Indeed, moths are the greatest enemies cushions have, and the cloth-work of a badly-cared-for carriage is usually found pierced with holes. The wheels want attention in hot or very dry weather. They should be damped every day, or even covered up at times with a dampish cloth, for the sun soon shrinks a

wheel; the tire then becomes loose, or flies off entirely when the carriage is in motion. The wheels, and every part of the carriage, should be washed down after a run on muddy roads. The water is thrown upon the wheels until the dirt is sluiced off; the trap is then dried, and gently polished with the wash-leather. But it should not be rubbed hard.

The greatest care should be taken of the harness. All the metallic portions ought to be kept bright and shining, and the leather-work polished if black, and not patent. There are special applications for bringing up the shine of patent leather. Buff harness is washed, dried, and in some cases oiled. The harness should on no account be hung up in the stable, but in the room set apart for its use.

A Child's Donkey.—We generally call this animal the children's donkey; but, indeed, in a neat, little, well-arranged trap, and with pretty harness, older people need not be ashamed to ride behind a fleet donkey. The ass is usually considered an exceedingly slow and obstinate animal; but if he comes of a good strain, and is well fed and treated, he is quite the reverse. As for his stupidity, this is based upon a popular fallacy; and, indeed, if a donkey be in a field with horses or cattle, it is he that rules as a little king among them; for if there be any trick to be played—such as opening a gate, or battering down a part of the fence—the donkey is invariably the ringleader. The mistakes we make in our treatment of this animal are overleading him, and feeding or housing him badly; but if we make up our minds to take as much care of the creature as if it were a pony, we will find no better nor more willing worker. As to buying one, we should not purchase under four years of age, and a fair price will have to be given. A good donkey, really *willing* to “go,” would be really cheap at three or four guineas. The harness, &c., would cost about a pound more, and the trap may be a small pony carriage or village cart. The points or properties we are to look for when buying are as follows:—He should be strong and well built, with good, straight, muscular legs, plenty of bone and sinew, and good knees: the larger the better. The head should be smallish, the neck strong and shapely, with the upper part or crest wide. The skin should not feel thick, and the tail should be nicely placed; the coat good, and the eyes bright and intelligent-looking. The animal ought to be of an active, good-running strain, and he should be lightly shod. In *feeding*, the same rules apply to both horse and donkey, although the latter is far more hardy, and will eat rougher stuff. Nevertheless, when doing work, he should have oats, and carrots or mangolds also. He ought to be kept in a dry, comfortable, well-ventilated house, and very

well bedded. But during the summer, if one has a paddock, or the liberty of a common, he may be left a good deal out of doors. He should be *groomed* regularly every day, and, if he has to run in a nice trap, it will be well to have the coat kept short during the summer months. Donkeys are very hardy, and, as a rule, healthy all the year round. If one should turn ill, however, he is to be treated on precisely the same lines as his cousin, the horse. Donkeys are fit for a good deal of work in the country, and, if it be only for the sake of keeping large lawns well mowed, one is worthy of his food.

Care of the Horse.—When *on the road*, we must be careful not to over-drive the animal, nor to take him too long journeys day after day. On rough roads, or uphill and downhill, extra care should be taken, and the driver should always be in touch with the horse's mouth—with a gentle hand, however, and ready to support him in case of a stumble. The animal should never be left standing for any length of time at an inn-door or elsewhere. If he must be so, a rug should be thrown over him. In warm weather a mouthful of water now and then when on the road does good, although some object to this. But it is unsafe to allow a horse, while stopping anywhere, to eat the damp grass by the roadside. As to feeding while on a journey, this should never be neglected; nor does it do to trust to the tender mercies of a stabloman or ostler. Indeed, the best plan by far is to carry one's own oats and nose-bag. After stopping, therefore, let the horse have a few minutes to breathe and rest—supposing he is not to be taken out of the shafts—then a mouthful of water, and in five minutes after this put on the bag. If, on the return journey, he is at all tired, drive but slowly, and at the top of a hill let him rest for a few minutes, but not in a cold wind.

As regards the care of a horse while in the stable—the grooming, bedding, &c.—although the master need not attend to these matters himself, he ought to know when they are properly performed. To begin with, the stable lad cannot do his work properly to the horse, unless he has every requisite. These should, therefore, not be begrudged—horse-combs, a curry-comb, a scraper, dandy-brush, sponge, and horse-cloths, with a stable broom and fork, buckets, &c. If the servant has all these implements, and does not turn out his charge clean and smart, then he either does not know his duty or he neglects it, and so ought to have a month's warning.

The Stable Lad.—A lad to look after a horse or pony should have a liking for such an animal, know something of his ways, and be always patient and kind to him. He will, as a matter of course,

have other duties to perform about the house or the garden, but these need not interfere with the stable and coach-house work. Even if he had two horses to look after, he might, if at all industrious, spare time to do other things. So, on the whole, the servant should be willing, obedient, persevering, proud of his charge and his harness, and cleanly in his own person.

He begins the morning's work—say, about half-past six, certainly not later than seven—by giving the horse a little water, and his feed almost immediately after. If the weather be fine, it will do the horse good to be taken out for a little exercise before feeding. The lad then, while the animal is feeding, throws back the dry part of the litter with the fork, and rakes the soiled and the droppings away, and sweeps the stable up. Nothing offensive should be left about the place for any length of time, but rather carried away at once to the manure heap. He then most carefully dresses or grooms the horse, and afterwards takes him out for exercise. On the days when no member of the family is going out for a drive the horses should be exercised twice, and, of course, groomed twice, whether he has been out or not. Before being groomed the horse should be turned round, with his head to the light, and the curry-comb and brush well used—first on one side, and then on the other; so well, indeed, that all dust and dandruff are removed, and there remains not two hairs matted together. The head requires particular care and gentle treatment, the dust from hair in ears removed with the brush, and the ears smoothed with the hands. After the head, neck, and fore-quarters are groomed, the horse is once more turned round to face his stall, and the hind-quarters treated in the same way; and after all is completed, the wisp is used. This not only removes surface dust, but brings up the natural heat of the animal. In summer, or on fine sunny days in winter, the grooming is better to be done out of doors. The feet require special care; and if they be at all soiled, they should be washed, using some disinfectant soap and warm water. They must be carefully dried afterwards. It but remains to carefully wipe all parts of the horse on which hair does not grow with the damp cloth, and to comb out the mane and the tail. The hoofs may also be polished; sometimes they are even blacked.

The horse should be groomed well after coming off the road, and his feet and legs especially seen to, and washed if at all soiled. If he be drenched either with perspiration or with rain, that handy little instrument, the scraper, should be used, and the horse immediately after rubbed down with soft wisps, changed as often as they are wetted and soiled. The legs had best be dried with the sponge, instead of being scraped. It cannot be too firmly impressed on

our minds, that a horse's legs and feet are peculiarly susceptible to many kinds of trouble. Indeed, "humours" all fly here. Another thing we do well to remember is that a horse should not be at once stabled when he comes in all in a lather of sweat, but walked briskly about till cooler. After this, he must be well rubbed down and groomed.

As prevention is better in all cases than cure, a master who values his horse will hardly permit him to run the risk of internal inflammations by racing him hard during the last few miles of a journey. Let the animal take it easy, and his pulse will not then be at fever rate when he reaches his own yard. Again, when a horse is wet from rain, if he cannot be immediately seen to, he must, at all events, be kept moving about till he can be. Sometimes, after coming in from a longish journey in summer-time, a wash all over will do the animal a deal of good. A horse may also be allowed to bathe in a pond at times, but he must be seen to afterwards, and have a run.

The *bedding* of a horse cannot be too dry nor too abundant. Most horses lie down of a night, and they ought to have something very soft to lie on. The bedding should be plentiful behind as well as in front, and fairly level and smooth, sloping, if anything, towards the centre. The dry straw should never be put over the damp. Cleanliness in the stable is very essential; and whenever opportunity offers, and the weather is fine and drying, the horse being out, the whole place should be thoroughly washed down and dried again. Oaten or wheaten straw makes the best bed; pea haulm is somewhat hard; but the softer fronds of brackens or male ferns may be used when they can be had.

The feet of a horse should always be examined after he comes in from a journey. It is just possible he may have picked up a small stone, and this, if left, would undoubtedly result in lameness. Some grooms stop the fore-feet with a mixture of clay and cow dung, or with moss or tow. The stuff is packed in until it is on a level with the shoe, and kept moist with water. It is supposed to prevent the frog, or sole, from becoming too hard, and thus laming the horse. The practice is sometimes advisable, but the amateur perhaps had better take advice about the matter from a vet. before doing it, else he may do more harm than good. If the feet be thin, it is a good plan, before going out in hot weather, to anoint the hoof either with fish-oil or a mixture of bees'-wax with oil and tar.

Shoeing is a most important operation, and it would be difficult to lay down rules in print that could be followed in individual cases. We can only advise that it be done as frequently as need be—probably once in three weeks, or oftener—that it be

done by a smith who knows his work; that the hoof be pared, if necessary, and the frog not too much trimmed; that the iron be the best; and the horse shod so as to take no injury from possible brushing. The feet should invariably be examined after a journey, to see if the shoes are firm, and that no clench has given way or a nail become loosened or broken. If there be, he cannot be taken too soon to the farrier.

Stables should be warm, but at the same time very pure as to air. Ventilation should, therefore, never be neglected. Nor should a stable be dark. Darkness is not only injurious to the health, but to the sight as well. Stabling has, however, been already treated of in a previous volume of this work.

Food for Horses.—We have already said that on a new purchase coming home—right off the grass, for example—it would not be safe to change him on to oats and chaff all at once. This must be remembered. But for a horse that has to go on the road almost daily, the sooner he is pretty “hard” the better. When in his usual form, a hack or pony requires three feeds of oats a day, and on long journeys an extra feed. Sometimes bruised beans are mixed with the oats. This does very well for an occasional change, but not to keep on with, or we may heat the system too much and cause humours. Again, the oats themselves are sometimes bruised. We think this is, as a rule, unnecessary, and we have known cases where bruised oats caused diarrhoea. Carrots may be given now and then, and make a very nice occasional change of diet. Barley is another useful change of diet: but we must not forget that if we give a certain proportion of either beans or barley, we must deduct the same quantity of oats from the feed. What is called chaff—meaning good wheaten straw and hay cut up by means of the chaff-cutting machine—may be mixed with every feed the horse has at home. It does much good, satisfies, and fills out the animal.

Another thing that is very beneficial for the working nag is a *bran mash* every Saturday night. This may be given as follows:—Simply damp the bran—an ordinary-sized hack will want about a gallon—in water in a bucket, and add it to his evening feed of oats. Add also to this a tablespoonful of condition powder. This may be had from any veterinary establishment, and should always be kept in the house. Some hay, if sweet and pure, may be put in the manger for the animal to munch at night, if so inclined. The hay is usually kept in a loft, and should be frequently turned, in order to keep it sweet and pure. Too much cut grass or tares should not be given to a horse, for, like roots, it is apt to scour him, but a little may be allowed sometimes. Strange to say, the grass a horse eats out of doors, or

in other words, grazes, does not produce diarrhoea in the same way cut stuff will. During the summer months, if one has a small paddock or field, the hack can be grazed, and this is a very great saving in the keep of the animal. On the road, if a horse is tired, about a pound of oatmeal, well mixed in the drinking water, makes an excellent nutritious stimulant for him.

Cost of a Horse's Keep.—This may be got at in a rough-and-ready kind of way, if we remember that the price of good oats averages about eighteen shillings a quarter—subject, of course, to market fluctuations—and that we generally reckon sixteen feeds to the bushel for an ordinary-sized hack. Then there is the straw, about a shilling a truss; and hay, about £1 for five hundredweight; bran, oatmeal, roots, or other odds and ends besides; but, indeed—all food included—we should be able to keep a hack for thirteen shillings a week, and even for less in summer, if we can graze him out a bit during the day. Extra work on the road, of course, means extra oats. The oats, by the way, that we buy should be good and sound and heavy. They should not weigh much under forty pounds to the bushel. The Russian white oats are very good, and so are what are called black Tartars. English oats can seldom be beaten, but the Irish are not so good. When a sack of oats is delivered, it ought to be turned into the corn-bin, which must be kept very clean and free from dust. Cleanliness of the trough and manger is also *most essential* to the well-being of the horse. The trough should be of iron, rounded at bottom, not wood—wood gets musty. The corn-bin need not cost much, but it is a first expense. Another necessary is the chaff-cutting machine. This costs about two guineas to commence with, and sometimes needs repair. Although second-hand ones are to be had at sales, it is best, we think, to buy one new.

The expense of sheeing is another item in the bill; about one shilling per foot is the usual price. Then comes the keep-up of the carriage itself; but with good care and housing this is really insignificant. Once in two or three years a new tyre or two may be necessary: cost, from five shillings each. A little paint for the iron-work will be needed occasionally, and about once a year the carriage may be varnished. This can be done by the owner, if at all handy. The cost of the varnish would be about five shillings, and a brush or two one shilling each. The very best varnish should be used, and, before it is put on, the carriage should be rubbed over with a wet cloth. To have a carriage varnished by a regular tradesman would cost about two pounds. The springs of the trap should be kept well varnished and painted, and the bolts here and there seen to, and tightened

whenever slack. Bar accident, there is nothing else needed.

Servants' Wages and Taxes.—Taking the taxes first, they are as follows:—A carriage with four wheels, adapted or fitted to be drawn by two or more horses, £2 2s. For one horse, £1 1s. Two-wheeled carriage, 15s. Male servant:—A lad who did duties, or was employed in other capacities, would not be rated because he now and then attended to a horse or the stable, otherwise the tax would be 15s.

As to the wages of a boy or lad to look after the horse and carriage, and do other work as well, this depends on his age, and whether he is to be trusted to drive or not. It would scarcely do to trust a mere boy to drive a horse, though many could. However, supposing it is a pony of twelve or thirteen hands that is kept, and there is little or no garden to look after, then a boy about fifteen, or one newly from school, if at all bright and intelligent, should be capable enough of seeing to this pony, doing the stable, cleaning harness and carriage, and also doing odd jobs in the house, such as cleaning the knives and boots, carrying up coals, and running messages. In the country, or even near to town, the services of such a boy could be had for half-a-crown a week, with his food. Or it might be better and handier to let him go home to his food and to sleep, and pay him eight shillings a week. But an older lad to drive and attend to the stable, &c., and also to look after a moderate-sized garden, under the master's instructions, would require five shillings a week besides his keep, or, without his food, say twelve shillings. If this lad had to wear some sort of livery, that, of course, the master would also have to pay for.

Taking everything, then, into consideration, and making an average calculation, it will be seen that one can hardly keep a hack, or pony, and small carriage much under sixty pounds a year, unless, indeed, the master is to do everything himself: and this would scarcely be advantageous. But for health's sake, for comfort's sake, and many other reasons, every one who can afford such an expenditure, living in reach of the country, should keep at least a pony and trap.

When the Horse is Ill.—It might seem that the proper thing to do when a horse is poorly is to send for a vet. This is true as a rule, probably, but it is one that has many exceptions. Simple remedies, even without medicine, are always best for simple ailments, and it is a well-known fact that physic cannot be administered to the healthy or comparatively healthy without for the time being injuring the system. Again, a veterinary surgeon

may not always be procurable: so we think that although in all cases of *serious* illness, professional advice should be had at the earliest moment, the owner of a hack or pony ought to know something himself about the ailments to which that animal is subject. When properly treated, a horse is a healthy animal; not so much so as the wild horse of the plains, however, for ages of injudicious treatment at the hands of his master—man—has engendered a good deal of what we call predisposition to disease. Be this as it may, if we buy a good healthy horse to begin with, take proper care of him, and treat him according to the dictates of reason, then, accidents apart, we shall very seldom indeed have him ailing. But we must keep well in view the things that do most often induce illness. And these are some of them:—(1) Insufficient or improper food; (2) long fasting; (3) deprivation of water at the time it ought to be given; (4) impure water, or over-hard water constantly given; (5) shocks to the system from cold—and these include chills, however caught, as by standing him about in draughts when heated, putting the animal into a stable when wet with rain or perspiration without properly attending to him, &c.; (6) impure air, such as that of a close and noisome stable; (7) over-driving or over-excitement, and an uncleanly state of the food and surroundings, including musty hay, dusty oats, and dirty manger; (8) a too sudden change of diet at any time. There are many other causes of illness, but these are the principal, and we should take very great care to avoid them.

We counsel the keeping of a good useful horse-medicine chest in the house. It may not be often needed, but it may probably turn out just that stitch in time that saves nine. We think, too, that every owner of a horse ought to know how to give him a drink. It looks a simple thing to do, but one has only to try two or three times, to find that it is far less easy of performance than it appears. Bleeding a horse is sometimes necessary, and this is also a simple operation, that those living far away in the highlands and islands should know how to perform. Only it ought to be remembered that it should never be done unless the case is very urgent, and fever running high. The *fevered* state is often caused by that against which we have already warned the reader, viz., sudden change of diet. One buys a horse, for example, that has been mostly fed on grass, and thinks he is doing a kindness by putting him into a warm stable and feeding him up on oats, &c. So fever attacks him—a general fulness of blood, a bounding pulse, and heat and dryness all over. Send for a veterinary surgeon, if possible. He will bleed him well, and put the animal on low diet, giving him a laxative draught of Epsom or

Glauber salts, and keeping him cool. Perhaps the bleeding may have to be repeated. Inflammations of various kinds begin in a similar way, or there is far more restlessness, with redness of eyes, heat, with plunging and delirium sometimes. These are cases for professional advice. All one can do is to keep the animal as cool as possible, and give water till the veterinary surgeon comes. On sending for a veterinary surgeon, let the messenger be a trustworthy person, and give him a note describing briefly the symptoms. The veterinary surgeon will thus have some idea what instruments and medicines to bring with him.

Some people, although they notice that the horse has taken a chill, do but little or anything to assist him, trusting entirely to Nature. This is a bad plan. Colds that might be cured in a few days may thus run on to serious ailments. When, therefore, a horse is observed to shiver now and then, and to have a watery discharge from the nostrils, with perhaps some running at the eyes, he ought to have either a fever drink, or a Dover's Powder with aniseed, sulphur, &c., in a pint and a half of warm gruel, with treacle. Cover him up with a rug, but keep the stable well ventilated, and about a temperature of 55°. Give the drink every night if required, and a warm bran mash three times a day. Walk him out several times daily. Those more serious illnesses, such as inflammation of the lungs or bowels, heart and liver or kidney troubles, vertigo, staggers, apoplexy, &c., can be safely treated only by a veterinary surgeon; although a fever drink or laxative ball, or both, may be given before professional assistance arrives, a rug being thrown over the horse, and some water given frequently, neither too cold or too much at a time.

It is not uncommon for a horse to have giddiness, or even a fainting-fit, when on a long irksome journey in hot weather. It is caused by weakness of the heart's action, and consequent damming up of the blood in the brain. Whenever, therefore, one sees his horse in evident distress of this kind, he should pull up at once. Let him jump down and go to his head, and see that the collar is not pressing on the windpipe. It may be advisable to take him out of the shafts, and let him rest a few minutes, giving him a few mouthfuls of water. When he gets home, he should have an aloes ball to open the bowels well; and although he should be exercised daily, he must not be driven for a few days.

This giddiness may be mistaken for choking, or *vice-versâ*. Make it a point not to overfeed a horse when he is on a journey. Beware, too, of letting him eat a lot of grass by the wayside. Compression of the windpipe by the collar while on a hill will often choke a horse, and he may fall. Ease

him at once. But make a point of never driving a horse immediately after a full meal.

Every one who owns a horse should notice daily whether the droppings are as they ought to be. Nothing indicates disorder of the digestive organs sooner than anything wrong in this direction. If *constipated*, then, or if suffering from *diarrhœa*, remember that after all it is only a symptom, and that although a dose or two of well-chosen medicine may alter it, that will not be removing the cause; so that we must, in either of these cases, make a change in our mode of feeding. Over-eating or drinking after a long and tiresome fast is very likely to induce some serious digestive ailment, and so is impure food or water. Flatulence, set up by fermentation of the food, causes at times most alarming symptoms. If at home in the stable, these may, perhaps, be confined to extreme restlessness, throwing the head round in a jerky way towards the flank, striking the stomach with the hind foot, &c.—all indicating pain and uneasiness. In such a case it will be well to send for the vet. at once; but meanwhile a clyster can be given, say, of a gallon of weak gruel, with two ounces of soft soap or a couple of handfuls of table salt in it. At the same time, give a carminative or alkaline ball—which will generally be found in the medicine chest. This is to ease the symptoms and neutralise the acid.

Sometimes *stoppage in the bowels* begins in the way just described, and this is a very dangerous complaint. If the symptoms are not so urgent, give at once half a pint of good brandy or whisky in a pint or more of warm water, and some tincture of ginger, put a rug over the animal, rub the belly well, and afterwards walk him about until the vet. comes.

Many of the ailments of horses come under the heading of *accidents*, and these are usually caused by careless driving or rough handling. One of the most annoying to the owner is that of *broken knees*, caused by a fall. The injury may be of a very severe character, or it may be but slight; but, nevertheless, it must be carefully treated. Even from a mere abrasion the dirt and sand should first be carefully washed and removed, and this must be done with warm water. The horse must in any case rest in the stable till the wounds are healed, though gentle walking exercise may be given daily. If the wounds are but slight, a weak solution of sugar of lead with the liquid extract of opium will be the best application. A piece of lint should be used, and the whole bandaged, but not tightly. If the cuts are deeper, some Friar's Balsam will be found useful, with Sanitas ointment and a bandage. If there be much swelling and inflammation, poultices of linseed will be required to reduce the inflammation; after

which water dressing—lint steeped in water with which a few drops of pure carbolic acid has been mixed—with oiled silk and a bandage, will complete the cure. In cases of very deep cuts stitching may be necessary; and, in any case, some laxative medicine should be given, and the diet lowered for a few days.

There may be times when a horse suffers from worms, and as these give rise to many kinds of mischief, he had better be treated for the complaint. Worm balls are to be found in the medicine chest. The horse must not be driven while taking the medicine. The balls should be given on an empty stomach, and the diet lowered, warm bran mash being given, and but little oats. If a horse has a bad accident of any kind, whether it be a wound or fracture of bones, a vet. should be sent for with all despatch. There may be hope for the animal, or it may be better to put him out of his misery. The flesh of a horse heals very quickly, however, and with ordinary evenly-cut wounds the treatment is

simple enough. We must first clean the wound by washing it with lukewarm water. After this is done, the edges are carefully brought together, and there secured by sticking-plaster. It is possible, however, that a stitch or two may be necessary to secure adhesion. The plaster in long strips is also put on, leaving room, of course, for the exudation of matter. In painful jagged wounds, hot fomentations—not too hot, remember—with poppy-heads may be necessary to soothe the pain and prevent fever; and if there be much swelling and inflammation, a nice soothing poultice should be applied next, and frequently changed. A linseed poultice is as good as any, but oatmeal may be used. It is simply boiled till thick, or a quicker plan is to bring the water to the boiling point, then shake in the meal until thick, putting in no salt, of course. Poultices and fomentations are very useful in reducing swelling and inflammation. To a tired horse nothing is more congenial than fomentation of the legs and feet.

NERVOUS DISEASES.

Neuralgia.—The pain of neuralgia is nearly always intermittent; that is to say, it comes on in paroxysms, and it is aggravated by anything which depresses the vitality or lowers the general tone of the system. It commonly arises spontaneously, but may result from a blow, wound, or injury involving a nerve. It not infrequently follows an attack of ague, and the pain is experienced in the forehead, either on one or both sides.

Neuralgic pains occur in any part of the body, but the commonest form is that which attacks the head or face, and is familiarly known as “tic” or “tic-douloureux.” Sometimes the pain in the face is associated with, or caused by the presence of, decayed teeth, but it is quite distinct from “tooth-ache” and “face-ache.” The pain is excruciating, and, if long continued, quickly undermines the health of the sufferer. A well-known authority says:—“The pain varies in character; it may be tingling, aching, burning, boring, crushing, cutting, stabbing, darting; it may be more or less continuous, but usually occurs in sudden lightning-like shocks, which come on either singly, or in paroxysms made up of a larger or smaller number of such shocks; and even when the pain is continuous it usually presents exacerbations presenting more or less of this latter character. The pain varies also in its intensity; in its severest paroxysmal form the patient’s sufferings are horrible—sometimes he raves and stamps like a madman, sometimes screams aloud, sometimes utters half-

suppressed groans; but, under any circumstances, is so absorbed in the intensity of his suffering that he appears almost unconscious of everything which is going on about him; on the other hand, it may consist in nothing more than a little tingling, creeping, or burning. This is often the case during the inter-paroxysmal stage of those cases in which there is never entire cessation from pain, and such sensations often constitute the commencement of each paroxysmal attack.”

After a severe attack of neuralgic pain in the head, the hair may fall out or turn grey. In tic-douloureux the patient often rubs his face either with the hands or a handkerchief, and this constant rubbing not infrequently has the effect of rubbing down the hair on the affected side, so that it presents the appearance of being kept closely shaven. In very severe cases the paroxysms of pain are attended with spasmodic contraction of the muscles of the affected part. Some cases run an acute course and rapidly subside, but more commonly the patient suffers off and on for years. It is always unsafe to promise a speedy cure, for although there are remedies which are efficacious in affording temporary relief, there are few on which absolute reliance can be placed for eradicating the disease.

There are many steps which may be taken to improve the condition of the general health and ward off the attacks. Good diet is essential, and it should include a fair allowance of meat, bread, eggs,

and especially milk. Regular and systematic exercise is an invaluable adjunct to good feeding, powerfully contributing, as it does, to the strengthening of the nervous system. An annual holiday is a great therapeutic agent, and every man or woman subject to neuralgia should make a point of getting away for at least a month in the summer. This, it must be admitted, is often difficult to accomplish, but with an effort it can be done. The expense need not be great, and the saving in doctors' fees and chemists' bills is no inconsiderable item. When the patient is pale and anæmic, it is essential, before other treatment is resorted to, that iron should be administered freely. Dialysed iron or sulphate of iron pills should be given three times a day after meals for at least a fortnight.

An excellent remedy for neuralgia is quinine. Two two-grain sulphate of quinine tabloids should be given every four hours. Quinine will always cure an attack of neuralgia when it is due to malarial or aguish influences, and it is equally efficacious when the pain is confined to the forehead, or when it occurs periodically; that is to say, at the same time daily. Quinine is said to control neuralgia and ordinary face-ache more effectively when the powder is taken in small doses frequently—for instance, as much as will adhere to the tip of the finger dipped in the powder.

Another good remedy is croton-chloral-hydrate. This is made up into pills, each containing five grains, and two of these are given every four hours. It is the remedy to select when the pain occurs chiefly in the face, and there is reason to think that it is due to the presence of decayed teeth. Tincture of gelsemium is equally efficacious in this special form of the complaint, and from five to ten drops should be taken in a little water every three hours. The relief afforded by this remedy is often very striking. It is not by any means a bad plan to give the croton-chloral pills and the tincture of gelsemium alternately—say, the pills every alternate hour, and the gelsemium in the intervals.

Phosphorus is another excellent remedy, and by many it is regarded almost as a specific. It is best administered in the form of a pill, the dose of the phosphorus ranging, according to the severity of the case, from one-hundredth of a grain to a thirty-second. The relief is not immediate, and the remedy should be taken continuously for some days. The hypophosphites, given in the form of Fellows' Syrup, are also useful.

Chloride of ammonium or sal-ammoniac is an old favourite. If it means to effect a cure, it does so at once; that is to say, after three or four doses. The dose given should be at least forty grains. It dissolves readily in water, but the solution has a taste which,

to say the least of it, is not agreeable. It may be flavoured by the addition of half a teaspoonful of fluid extract of liquorice. Tabloids of chloride of ammonium containing ten grains are kept by most chemists, and four should be taken with water every four hours.

Another good remedy is citrate of caffeine, which is best given in the form of Bishop's Effervescent Citrate of Caffeine, the dose being a teaspoonful in a wineglass of water. Many patients say that they derive more benefit from this than from any other mode of treatment.

Arsenic, again, is useful, but it is better adapted for chronic than for acute cases. Three drops of Fowler's solution, as it is called, should be taken in a wineglass of water three times a day after meals; or, better still, a tabloid triturate of arsenious acid, containing one-hundredth of a grain, should be taken every four hours for a couple of days. The dose is usually efficacious, and it should not be exceeded without consulting a doctor. Arsenic, if administered too long, gives rise to vomiting and other disagreeable symptoms.

Belladonna is indicated in neuralgia when the pain is acute, throbbing, and intermittent, and there is an unusual sensitiveness to light, noise, and movement. Three of the tabloid triturates of tincture of belladonna should be given every alternate hour. It is a good remedy, but not equal to some of those already enumerated.

Sometimes a teaspoonful of syrup of chloral, with twenty grains of bromide of potassium, will give more relief than anything. It induces sleep, and then the pain is forgotten, and perhaps may not return for some hours.

Trinitrine tabloids are often of very great service in the treatment of neuralgia. One should be taken every four hours. They sometimes gives rise to throbbing in the head, but this passes off in a very few minutes.

There are many liniments which may be painted on the affected part or rubbed in with advantage. One of the best of these is aconite liniment. It is a powerful application, and produces a good deal of smarting and tingling in the part, usually followed by numbness. It is a poison, and must be used with caution. A good combination is a mixture of equal parts of aconite liniment and belladonna liniment.

A still more efficacious remedy is a hypodermic injection of morphia, but for the administration of this the services of a doctor will have to be obtained. It is never safe to let a nurse give it, as a little mistake in the dose may make all the difference between life and death; also the acquirement of a morphia habit is sedulously to be guarded against. Electricity is, in many instances, most useful, and a

constant current is more likely to relieve pain than an interrupted one. It must be applied carefully, so as to avoid giving a shock. Galvanic chains are often recommended, but the current they generate is too weak to do much good in these cases. Freezing the part by means of ether spray is frequently effectual, the pain departing at once.

Sciatica.—Sciatica is a most painful and distressing disease. The pain is usually felt at the back of the thigh and extends downwards towards the knee. It may depend on some gouty or rheumatic condition, or it may result from an inherited tendency. A common exciting cause is exposure to cold or wet, whilst it is said that it may be induced by over-walking, sitting on a damp seat, and numerous other causes. It is especially apt to occur about middle age, and not infrequently persists for some years. The violent manipulations of an unskilled rubber employed to treat a dull aching pain in that particular region may bring on an attack of acute sciatica. It usually begins with more or less vague discomfort in the affected limb, associated perhaps with deadness, stiffness, and tingling. The pain may be shooting, darting, or burning, or it may be like the shock of a battery. It may come on in paroxysms, with intervals of complete immunity, or it may be almost continuous. Throbbing or pulsation is not uncommon. When the pain is at its height, walking is almost impossible, and the slightest movement causes acute suffering. On examining the part it will be found that some spots are much more painful than others, and these often mark the seat of the disease. The skin is exquisitely tender, so that the slightest touch is painful. Cramp in the muscles is not uncommon, and may render the patient a chronic invalid. The patient is worn out with suffering, and his general health deteriorates. Fatigue or mental worry always increases the pain. Sometimes it comes on quite suddenly, and departs with equal abruptness; but it usually runs a chronic course, the patient suffering from it for months and even years.

The treatment of sciatica is by no means easy. When there is a gouty or rheumatic tendency, this must receive attention, and the diet should contain little meat food, whilst stimulants should be prohibited. A draught containing bicarbonate of soda fifteen grains, iodide of sodium five grains, and twenty drops of tincture of colchicum, taken three times a day, may prove useful.

When there is no special tendency or diathesis to treat, speedy relief is often afforded by taking a five-grain tabloid of antipyrin three times a day. Salol tabloids are also useful, two being taken four times a day.

Quinine, in five-grain doses three times a day for two or three days, is not by any means a bad mode of treatment. Phosphorus pills, containing one-hundredth of a grain in each, often do much good in the long run; but they are not speedy in action, and have to be taken three or four weeks before they prove efficacious.

A better remedy is chloride of ammonium. Three of the ten-grain sal-ammoniac tabloids should be taken three times a day for three days, and they will often afford very prompt relief.

Probably the hypodermic injection of morphine, or of morphine and atropine combined, is the best mode of treating sciatica; but these powerful remedies should be administered only by a medical man, for reasons mentioned above. The consequences of leaving hypodermic injections under the control of a patient are often deplorable.

There are many local applications which are very useful—one of the best being the common turpentine liniment. It should be rubbed in thoroughly, and does no good unless it reddens the skin and produces a good deal of smarting. Another good application is composed of one part of belladonna liniment and two parts of chloroform liniment. Benefit is often experienced from the use of a mixture of equal parts of aconite liniment and chloroform liniment. It should be labelled "Poison—not to be taken," and should be applied with a brush over the painful parts, care being taken not to get it into cracks or cuts.

When other remedies fail, dry cupping may be used with advantage. Cupping has gone very much out of fashion, but, for all that, it is useful. Firing is sometimes resorted to, the skin being seared with a red-hot iron. It is not a pleasant remedy, but it often gives prompt relief. It should not be resorted to lightly, for it leaves sores which may take many weeks to heal completely. Electricity is useful, sometimes the interrupted and sometimes the constant current succeeding best. Massage, properly performed, is excellent; but the common shampooing, such as can be obtained in a Turkish bath, is too superficial to avail much.

The baths of Buxton, Wiesbaden, Wildbad, and Royat are useful in this complaint. The patient must not be surprised should his progress towards recovery be slow, for the complaint is always obstinate, and is not very amenable to medicinal treatment.

Headache.—Headache is one of our commonest maladies, and forms a prominent symptom in the progress of most illnesses. It is the constant complaint of town-dwellers, and is a sure indication of the existence of nervous exhaustion. It more often

depends on some functional disturbance than on any real organic disease. The plethoric or congestive headache is the result of an excessive determination of blood to the brain. This form attacks chiefly those who live well, work hard, and take little or no physical exercise. The anæmic headache, on the contrary, is the result of overwork combined with under-feeding. The former variety is more commonly met with in men, the latter in women. The migrainous headache is another form, and usually attacks the patient periodically, lasting some days, and being associated with nausea and an incapacity for exertion, both mental and physical. The neuralgic headache is a special or specific form attacking those who are subject to neuralgia. Sometimes the attacks are confined to one side of the head only, this variety of the complaint being known as hemicrania.

The treatment must of necessity depend on the cause. It is absurd to speak of specifics for headache, as the remedy or mode of treatment which proves efficacious in one case, may prove inoperative or even injurious in another. For example, in congestive headache, when the face is flushed and the temples throb, the patient should be put to bed, kept on low dietary, and freely purged. In anæmic headache this treatment would intensify the symptoms, and the treatment should consist of the free administration of tonics—iron especially—with an abundance of good nourishing food, and a fair allowance of stimulants. When the headache is neuralgic in character, nothing does so much good as a full dose of quinine. A five-grain tabloid of sulphate of quinine should be taken three times a day immediately after meals.

For headache depending on migraine nothing is so useful as antipyrin, two five-grain tabloids being administered in a little water, and repeated if necessary in three or four hours. In all forms of headache local applications are useful. Every one knows the immediate relief often experienced by binding a pocket-handkerchief round the brows. An evaporative lotion, such as Eau de Cologne or Florida Water, is both grateful to the patient and efficacious. Another popular remedy is the application to the painful spot of a menthol cone. It acts as a local anæsthetic, and calms the excited and painful cutaneous nerves. Liniment of aconite, painted on with a brush, is equally useful: but it is an active poison, and must be employed cautiously. In very severe cases it is customary to freeze the part by means of an ether spray, but this should be done only under medical advice. Headache is not difficult to cure, but it is essential, for successful treatment, that its origin should be detected, and measures taken accordingly. The possibility of there being some sanitary defect in the

house should not be forgotten, for this is a *great* source of illness of all kinds.

Apoplexy.—Apoplexy is usually due to an effusion of blood on the brain. For years past the patient has led a life which has lessened his powers of resistance. He may have worked too hard, may have suffered from over-anxiety, may have been incautious in exposing himself to cold and wet, or may have been intemperate. At all events, there has been some condition which little by little has led to a gradual degeneration of the blood-vessels. The change may have gone on unconsciously for years, but finally the time comes when, in consequence of some sudden exertion or excitement, or possibly an over-hearty meal, one of the blood-vessels in the brain gives way, and there is a hæmorrhage. The patient may become gradually insensible, but more commonly he falls down suddenly, as if he had been shot. It looks at first like a fainting fit; but the pulse is full and bounding, and the face is flushed, and when the patient to some extent recovers consciousness, it is found that he is partly paralysed, there being loss of power in one or both arms or legs.

This condition may occur in young people, but it is more likely to happen to those who have passed the age of forty. What the upshot will be depends on the situation and, to some extent, on the amount of the bleeding. The paralysis may be temporary, but it is more likely to be permanent, and at the best the case is a grave one. Often the faculty of language is lost, from destruction of that portion of the brain which presides over it; and it may be months, or even years, before the patient can make himself understood in even the most imperfect way.

There is, unfortunately, little or nothing to be done. A doctor must be sent for at once, and, pending his arrival, the patient must be placed on the floor or in bed, with his head well supported. The room should be cool, and he should have an abundant supply of fresh air. The head should be sponged with cold water, and the application of an ice-bag may be of service. A mustard poultice to the calves of the legs will at all events do no harm. There should be nothing tight about the neck, and the collar and necktie should be loosened. The necessity for sending for a doctor is obvious, but it must be distinctly understood that he cannot "cure" him. The most he can do is to take steps to prevent the recurrence of the bleeding, and many months will in all probability elapse before the clot which has been formed is fully absorbed. Apoplexy is a most serious complaint, and is quite unsuited for domestic treatment.

Sunstroke.—Sunstroke or heatstroke is, in all hot countries, a very fatal disease. Soldiers oppressed

by the weight of clothes and accoutrements when marching or fighting are often victims. Workmen, and artificers, and stokers employed in heated rooms, also suffer. It is common enough in India during the hot season, and cases sometimes occur in England during the heat of the summer. A dry air is more readily tolerated than one loaded with moisture. Healthy vigorous people can bear a higher degree of heat, especially if they lead regular lives; whilst the sick and weakly quickly succumb. Acclimatisation has considerable influence in establishing toleration, new arrivals always suffering more than those who are accustomed to the climate. It is well known that a native can bear an amount of sun on his shorn head, neck, and half-naked body which would quickly prostrate a European. But to a temperature rising above a certain degree all succumb, and the natives of India suffer like others, and die from *loomarna*, or hot wind stroke.

Sunstroke is not uncommon on board ship, passengers and others on the mail steamers in the Red Sea, in the hot months of August and September, frequently suffering.

In the old army days the mortality from sunstroke was very often great. The following instance is of historical interest, and is often quoted:—"In May, 1834, the 68th Regiment, quartered in Fort St. George, Madras, attended the funeral of a general officer. The regiment paraded in full dress, at an early hour in the afternoon, in one of the hottest months of the year, their tight-fitting coats buttoned up, their leather stocks as stiff and unyielding as horse-collars round their necks, heavy cross-belts so contrived as to interfere with every movement of the chest, heavy shakoes on their heads, made of black felt mounted with brass ornaments with wide, flat, circular tops, ingeniously contrived to concentrate the sun's rays on the crown of the head, and without protection in the way of a depending flap for the nape of the neck. So dressed, the men marched for several miles. Before the funeral parade was over, the soldiers began to fall senseless—one died on the spot, two more in less than two hours. Men suffering from insolation in various degrees were brought into hospital all that night and part of next day. The cases that did not prove fatal, although their real nature was correctly understood by Dr. Russell, acting-surgeon of the regiment, were all registered as cases either of 'continued or ephemeral fever.' The symptoms in the fatal cases were thirst, excessive heat of skin, extreme prostration, immediately followed by gasping respiration, coma, stertor, lividity of the face, and death. After death no morbid appearance was found in the brain, but in the lungs of all there was extreme congestion. There lingers a tradition of this parade in Madras to this day."

There are several varieties of sunstroke. Not infrequently the patient falls down, gasps, and expires before anything can be done for his recovery. In other forms the first indication is an inability to retain the urine. Sometimes a wild shout of laughter, or an attempt to escape in terror from some imaginary enemy, ushers in the more characteristic symptoms. After a longer or shorter continuance of this condition the patient becomes insensible, there is great heat and dryness of the skin, the breathing becomes hurried, noisy, and laboured, the pupils contract and are insensitive to light, the heart beats tumultuously, the pulse fails, and there are convulsions.

A well-known authority says:—"In a large proportion of cases, from the commencement of the attack to the termination in death, the patient never moved a limb, or even an eyelid. In former times bleeding was always resorted to in cases of sunstroke, but is now discarded. A few years ago a series of cases occurred on board a steamer in the Red Sea. This treatment was adopted, and a fatal result followed in every instance. Dr. Maclean says:—"During active service in the presence of the enemy an officer of rank had sunstroke. The assistant-surgeon in medical charge of the battery where this happened had the sufferer instantly removed to the nearest shade, stripped him, used the douche freely, and had the satisfaction to see his patient revive and consciousness return. An *official* superior, an *older*, not a *better* physician, unhappily coming up at this critical moment, insisted on opening a vein; a few ounces of blood trickled away, and so did the life of the officer. Mortal syncope immediately followed the operation.'"

The best treatment consists in the plentiful administration of cold water. The patient should at once be carried to the nearest shade, stripped, and freely doused over the head, neck, and chest with cold water. He should be given plenty of water to drink; and should it induce vomiting, so much the better. A blister or mustard poultice to the nape of the neck may be useful.

Sunstroke is often followed by prolonged incapacity for work of any kind, either physical or mental.

Convulsions.—The term "convulsions" is very comprehensive, for convulsions may be due to so many causes. Children, for example, get convulsions from flatulence, from indigestible food, or errors of diet, or even worms. When boys and girls are convulsed, it is often from St. Vitus's dance or chorea; whilst in older people convulsions may mean apoplexy, or epilepsy, or perhaps only hysteria. As so many different complaints are comprehended in one generic term, it is difficult to give any very definite direction for the treatment; but there are

certain measures which may be resorted to with the full assurance that, at all events, they will do no harm. The patient may be put to bed, but, as a rule, it is better to leave him on the floor, putting down some rugs for him to lie on, and supporting his head with cushions. His collar and necktie should be loosened, and in the case of women the stays should be removed. The windows should be opened, so as to admit plenty of fresh air, and the hands, if cold, should be chafed. A hot-water bottle may be applied to the feet, and the tongue should be protected from being bitten by slipping in a piece of cork between the teeth. After the attack is over, the patient should be left quite quiet in a cool room, and should be encouraged to sleep. Stimulants should not be given, but a little beef-tea or essence of beef may be kept in readiness. A doctor should be sent for; although the attack may be of a transitory nature, it is just as well to be prepared for something more serious.

Sometimes convulsions persist or recur, and then the best remedy is bromide of potassium. There are three bromides in general use—the bromides of potassium, sodium, and ammonium. Any one of these three may be given, or they may be administered in combination. The dose of one of the bromides alone is twenty grains, or ten grains of each if all three are given. They may be given in milk or water, and flavoured in any way that may be thought best. In the cases of children a proportionally smaller dose would be given, according to the age of the patient. A single dose of the bromides will often cut short a series of attacks of convulsions.

Another almost equally efficacious remedy is chloral, given in doses of fifteen grains dissolved in water, and flavoured with syrup of tolu. When the patient is insensible, and cannot be induced to swallow, the drug should be mixed with a couple of ounces of beef-tea, and injected into the bowel by means of an enema apparatus. An ice poultice, made by placing finely-broken-up ice in an india-rubber bag and applied to the head, is often a great relief to the patient, and will do much to check the convulsions. Sometimes the inhalation of a few drops of chloroform is efficacious, but this should be resorted to only under the advice of a medical man.

Fits.—A person who suffers from “fits” is described technically as an epileptic. Epilepsy is a chronic disease attended with periodical attacks of insensibility associated with convulsions. It is the disease which was described by ancient writers under the name of “*Morbus sacer*,” the sacred disease. It is not a common complaint, and probably not more than one per cent. of the whole community suffers from it, or from any disease with which it could be confounded.

It is often said that it is hereditary, but the evidence on this point is far from conclusive. Men and women suffer from it to an equal extent, and there is no special preponderance of either sex observed in hospitals devoted exclusively to the treatment of this complaint. The majority of cases are met with between the ages of twenty and forty, or at the outside forty-five, and its occurrence in old people for the first time is comparatively rare. It is usually supposed to arise from some accidental exciting cause, but this is not universally the case, for in a great number of instances it appears to arise spontaneously. There is no doubt, however, that such disturbing factors as fright, grief, worry, or prolonged mental anxiety may predispose to it. Sometimes it follows an acute attack of illness such as measles or scarlet fever, but this is not common. Blows on the head, and injuries to the spine, have been known to give rise to convulsive seizures; but whether these are really epileptic in nature is questionable. The convulsions which occur in children are usually due to some mechanical irritation, such as flatulence, colic, worms in the intestines, or prolonged constipation.

In a fit or epileptic seizure, there is an entire loss of consciousness, the patient often being attacked suddenly in the midst of some occupation. He falls to the ground, and is violently convulsed, the spasms of the limbs being so powerful that it is impossible to restrain him until they subside. He usually foams at the mouth, and often involuntarily bites his tongue and lips. Sometimes there are premonitory symptoms, so that the patient knows that he is about to suffer from an attack, and takes steps to reach a position of safety. These premonitory symptoms—the “aura,” as they are called—are commonly so ill-defined as to be indescribable. The patient knows from some innate feeling that something is about to happen, but he is quite incapable of stating what it is that he feels; in fact, he is as a rule not in a position to communicate his sensations to others. Often enough it is simply a feeling of uneasiness which is experienced, although it may amount to actual physical pain referred to some one particular part of the body. In one instance, and that, it must be admitted, an exceptional one, the patient “experienced,” if the term may be used, a sensation like “the noise outside a booth at a country fair,” whilst in another case the patient before each fit had a vision of a hideous donkey, which rapidly approached him, and seemed, as he said, to take away his senses.

Sometimes the convulsive element is absent, and the patient simply loses consciousness, the absence of appreciation of surrounding objects lasting only a few minutes or even seconds. There may be a

little pallor of the face, some confusion of the ideas, an inability to speak, and then the functions of the body, together with the mental powers, again resume their ordinary sway. A true fit or epileptic seizure is always followed by drowsiness and a disinclination for work, but minor attacks pass away so quickly that there are no sequelæ.

It is commonly supposed that the epileptic at the moment of seizure utters a cry, but this happens only in a small proportion of cases. In some people the attacks occur only at long intervals, whilst in others they are frequently repeated, perhaps two or three times a week. There is a certain amount of periodicity about them, so that a confirmed epileptic often knows approximately how long he may rely on being free from his enemy. The fits rarely end fatally, but they derive their terrible import from the fact that they prevent the sufferer from going into society, and to some extent from following any occupation. No one will willingly or knowingly employ an epileptic, or retain him in a position of trust, and his occupations are necessarily limited. If by chance he should be a man of independent means, they are simply a source of distress and inconvenience; but if he unfortunately depends on his own exertions for his daily bread, he quickly finds himself in a position of dependence, or even of abject poverty. Our hospitals, and especially our workhouse infirmaries, are filled with epileptics, who are practically incapable of anything like constant work or continuous employment. After a time, too, the mental faculties become blunted, and the patient drifts into an apathetic condition from which it is extremely difficult to rouse him.

Epilepsy is easily recognised, and is not readily mistaken for any other disease. The sudden onset of insensibility attended with convulsions and followed by sleep, lasting perhaps for some hours, is only too characteristic. In an ordinary fainting fit the patient is not convulsed, and the attack rarely occurs without some very apparent cause. Hysteria, again, is a condition which is rarely mistaken for the more serious complaint. When a young lady bursts into tears and "makes a scene," to use the common expression, we sympathise with her, and endeavour to restore her equanimity; but, however much she may excite our sympathy, the idea that she is suffering from so serious a disease as epilepsy is hardly likely to be entertained. Malingerers often have fits in the streets with the view of extracting money from the pockets of the bystanders, but a little investigation will show that their "convulsions" are voluntary, the foam at the mouth being simulated by the judicious use of a piece of soap concealed beneath the tongue.

The great remedy for epilepsy is bromide of

potassium; in fact, if a person is suffering from fits of any kind, he cannot go far wrong in taking this drug. It lessens spasmodic movements of all kinds, and ensures sleep. The tabloids of bromide of potassium contain five grains in each, and two or three should be taken three times a day. In some cases, after being taken for a few weeks or months, they effect a complete cure, there being no return of the attacks, even when the medicine is discontinued. Sometimes they ward off the attacks, which, however, return as soon as the use of the drug is discontinued. Not infrequently they are only partially successful, diminishing the frequency and the severity of the attacks, but not entirely preventing their occurrence. Another good remedy is bromide of sodium, also given in tabloids containing five grains. It will often succeed after the failure of the bromide of potassium. Bromide of ammonium is another drug belonging to the same class, and is equally efficacious. The choice of the particular bromide depends much on the condition of the heart; and in making the selection, it would be well to take the advice of a doctor. In some cases there are reasons for preferring a mixture or combination of the bromides, all three being given simultaneously.

The advisability of discontinuing the use of the drug one day a week, so that tolerance may not be established, requires consideration, as it is a point of some importance to determine. If the patient is not doing well, it may be that he is getting so accustomed to his medicine that it is not having the desired effect; whilst, on the other hand, it may happen that the dose which is being taken is too small. Although in the majority of cases the bromides will effect a cure, it requires a nice discrimination to give them in the manner best adapted for the requirements of the particular individual, and in so delicate a matter it is important to have skilled advice. The form, the dose, the time of administration, the duration of the treatment, and whether it should be continuous or intermittent, are points which must be carefully determined. When the bromides alone have failed, the addition of a few drops of belladonna to each dose will in many cases at once effect an improvement, even when the belladonna alone has proved inefficacious.

When the bromides have been taken continuously for some time, a condition called "bromism" is often established, and the patient comes out in large unsightly spots, which disfigure the face, and often leave permanent scars. This is a condition which, if promptly treated, need give rise to no anxiety, but the use of the drug will probably have to be discontinued for a time. Even should the bromides entirely fail, there are other remedies, such as oxide of zinc, which are not without curative properties.

A person subject to fits should pay the greatest attention to his hygienic surroundings. His place of abode should be light, bright, and cheerful, and, above all, should be well drained. The food should be varied and readily digestible, and the meals should be taken with great regularity. Exercise, especially exercise in the fresh air, is very useful, and the patient should have a spongo bath—cold in summer, and tepid in winter—every morning on rising. He should keep good hours, and should retire to rest early. The bedroom must be well ventilated, and it

is better to sleep on a mattress than on a feather-bed. The clothing, both night and day, should be warm, and it is well to avoid as much as possible getting the hands and feet chilled. The lot of a person who suffers from fits is a hard one, but with a little care and attention, especially to matters of detail, life may be made bearable. An epileptic should never live alone; and if he can find some one who, knowing all the circumstances of the case, can be induced to share his lot, he may esteem himself fortunate.

PRESERVING AND PICKLING.

It has already been explained that home-made jam is almost of necessity more expensive, but superior in quality to that which is bought, if we have a garden of our own, and can see the state in which the fruit is when we pick it. Of course, this only applies to fruit that ripens naturally in our own garden, such as strawberries, raspberries, plums, &c. Apricots, as a rule, cannot be said to ripen properly in the majority of English gardens, the probable cause of this being that the climate is not hot enough. The apricot jam made by respectable wholesale manufacturers is produced from ripe apricots picked in Spain and Portugal. These are converted into pulp on the spot, and sent over in large enamelled tins hermetically sealed. The pulp is then re-boiled with sugar, while the stones of the apricots are cracked, the kernels split in half, and then added to the jam. The proportion of sugar to the pulp in making apricot jam is three-quarters of a pound of sugar to every pound of pulp. But before going into the details of jam-making, it will be best to give a few general directions on the subject.

Jam is made by boiling fruit, and then adding a certain quantity of sugar, this sugar varying in amount according to the nature of the fruit. First of all, it is very important that the fruit, of whatever kind, should be uniformly ripe. Another very important point is that the fruit should be picked on a dry day; and there is a tradition, though we cannot vouch for its accuracy, that the fruit should have the morning sun on it when it is gathered. If the fruit be damp, or even if the weather be foggy, the jam is likely to turn mouldy. It does not do to ignore these old traditions, which are sworn to by every housewife throughout the country. There is not a wine merchant in the whole of France who will not declare that claret will not be bright unless it be bottled when there is a clear blue sky. There are many things we do not understand the why and

wherefore of—like the needle pointing to the north—but they are facts, for all that, the proof of the fact being that it is so. But to return to the jam. We will suppose that the fruit has been gathered on a bright day, in the morning sun. Next we must see that it is free from dust and dirt, after which it must be picked, and all the stalks removed. In wholesale establishments this is done by machinery, and certainly this machinery has one great advantage over the ordinary domestic machinery. We remember a case of jam-making in which the following extraordinary result was observed, not long after the operation commenced. Some red currants had to be strung. A large basin was provided for the reception of the currants, while a little basin was placed by the side for the reception of the stalks. The good housewife, on entering the room, found the basin intended for the stalks nearly half-full, while the basin reserved for the currants was empty. The machinery employed on this occasion consisted of two boys, aged ten and twelve, who had just arrived home for their midsummer holidays. When children are employed to perform these domestic duties, it is as well to bear in mind the old maxim: "Thou shalt not muzzle the ox that treadeth out the corn."

Another point to be borne in mind in jam-making is that the jam is best when the fruit is boiled as soon as possible after it has been gathered: and here housewives have an advantage over manufacturers. It is always advisable to get the best sugar for jam. In the end it is the cheapest. The sugar should be crushed, but not powdered fine. If you were to use finely-powdered sugar for jam-making, the jam would be sure to be turbid. The fruit should be boiled by itself first, and, when it begins to get thick, the sugar added; only you must not let it get too thick, or else the sugar will not dissolve easily.

To make jam properly, you require a preserving-pan—an enamelled one is by far the best. The old

tradition is that the vessel should be made of brass. Brass pans also were always used in the manufacture of sugar-plums, but this tradition is passing away. Fortunately, the still worse one of making pickles in a copper preserving pan is now a thing of the past. The spoon should always be a wooden one. Whatever you do, avoid an iron or a pewter spoon. Care should be taken that the preserving pan is not too near the fire, and the fire not too fierce, otherwise the fruit is apt to burn.

While the jam is boiling, it ought to be carefully watched, and the wooden spoon scraped against the bottom of the preserving pan, to prevent it sticking, exactly as if we were making an omelette. At the same time it does not do to let the fruit boil too slowly. The jam will from time to time require skimming. The amount of scum thrown up depends a good deal upon the quality of the sugar—the worse the quality, the greater the amount of scum; hence, as we have said before, there is no real economy in using inferior sugar. In all jams it is an advantage to add a little brandy, but this is by no means essential. When jam is made from any kind of stone fruit, it is best to crack the stones and boil the kernels with the jam. These kernels contain an exquisite flavour of their own, very similar to almond, but infinitely superior.

In making home-made jam, the following proportion of sugar to every pound of fruit will be found as nearly as possible correct. It is a mistake to think that very ripe fruit requires less sugar in consequence of its being very ripe. As an instance in point, a gooseberry pie made from young green gooseberries, requires much less sugar in proportion than a pie made with ripe red gooseberries. To every pound of fruit, then, in making jam, you can add sugar as follows:—

Apricot Jam.—Three-quarters of a pound of sugar.

Blackberry Jam.—Half a pound of sugar. If apple is mixed, a little more.

Carrot Jam.—Boil till tender; rub through wire sieve the rind and juice of one lemon, a small glass of brandy, one pound of sugar. To make the jam look very nice, only use the red part of the carrot.

Black Currant Jam.—One pound of sugar.

Red Currant Jam.—One pound of sugar.

Ramson Jam.—One pound of sugar.

Gooseberry Jam.—Three-quarters of a pound of sugar.

Greengage Jam.—Three-quarters of a pound of sugar.

Plum Jam.—One pound of sugar.

Raspberry Jam.—One pound of sugar.

Rhubarb Jam.—Three-quarters of a pound of sugar, half the rind of one lemon, half an ounce of bitter almonds, or, if no almonds, juice of one lemon.

Strawberry Jam.—Three-quarters of a pound of sugar.

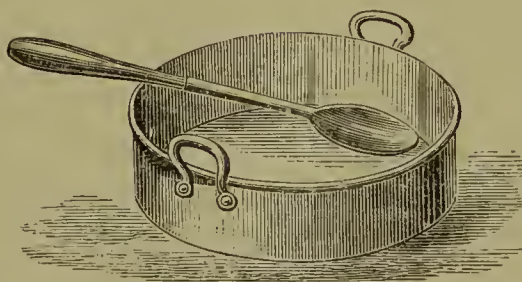
The general principle to be observed is not to destroy the flavour of the fruit. It will be seen by the above list that blackberries require less sugar than other fruits. There is less fruit *acid*, and consequently less sugar is required. Blackberries are very often what may be described as woody. In fact, very young gooseberries are often just the same, consequently there is no acid to overcome, and

too much sugar therefore would destroy the flavour altogether.

Bought jams are often largely adulterated. Turnips are sometimes used, but in the South of France, where apricot jam is made in large quantities, the material utilised is pumpkin or gourd.

First-class jam can be made from pumpkin or

gourd. The gourd itself simply supplies the base or material upon which you may work. Vegetable marrows, especially when they are overgrown, are equally good. In making jam of this description the same general principles hold good. We will suppose we have got a large gourd, weighing, say, half a hundred-weight. Cut it in half, take out the pips, and then take the pulp (omitting, of course, all within an inch of the rind), put it in a preserving pan with a drop of water, just to prevent it burning at starting, and let it boil. It will want a lot of boiling, as it is chiefly composed of water. When you have boiled it down to a proper consistency to make jam, you must add sugar to the proportionate amount of pulp, not to the original amount of the gourd. You can now flavour it with lemon juice, and zeste of lemon—*i.e.*, lumps of sugar rubbed on the outside of the peel; you can flavour it with orange juice and zeste of orange, which, of course, is lumps of sugar rubbed on the outer side of the orange peel—only, in the case of orange jam, it will require a lot of orange zeste to give it the real orange flavour, and when done is not equal to marmalade; or, best of all, you can flavour it with essence of almonds. You can add a few bitter almonds, sliced very fine indeed, which will be an imitation of the kernels out of apricots. If you mix in a few real



PRESERVING PAN.

apricots, skin and all, and put their kernels in as well, supposing the almond flavour has been neatly added, and not overdone, you will have a very good imitation, indeed, of apricot jam.

Another very good flavouring for jam made from gourds is ginger. You can make ginger jam, or a very good imitation of preserved ginger. In the case of making imitation preserved ginger, you must cut the inside of the gourd into pieces, like preserved ginger. You must then add about a teaspoonful of powdered ginger to every half-pound of sugar, as well as a little lemon-juice. The juice of one lemon to every half-pound will do. Some of the pieces must be stewed long enough to become thoroughly tender, but not absolutely a pulp. A little brandy is a wonderful improvement; and this jam or preserve, whichever you like to call it, owing to the ginger, will keep good a long time. It is far better after being kept for three or four months than when freshly made, as after a time these lumps of pulp get impregnated with the flavour of ginger, while at first they are, comparatively speaking, tasteless.

All jams, when they are finished, should be placed in jars, and covered over with a thin piece of paper soaked in brandy, touching the jam. The jar itself, which should have a rim round the top, should be covered over with a stiff piece of paper, and it is a very good plan to moisten the rim of the jar with beaten-up white of egg. If you then tie it round tightly with a thin piece of string, you exclude the air entirely; and, remember, this is the object in view.

Bottled Fruits.—We next come to the subject of bottled fruits, which are found so useful by housekeepers, especially in the winter-time, when they are able to place on the table the fresh fruit tart, almost equal to that which could be made from freshly-gathered fruit in August. There are certain general principles to be observed in regard to the use of bottled fruit, and before we describe how to bottle fruit—if you are blessed with a garden where you can gather the fruit yourself—we must first describe how to use it. We have never heard of a case in which persons have bought fruit for the purpose of bottling, as it would be infinitely cheaper and better to buy the fruit ready-bottled.

In many houses the use of bottled fruit is not sufficiently understood. There are bottled fruits of two descriptions. Take, for instance, red currants. We can buy currants bottled plain, *i.e.*, without any sugar; or we can buy what are called currants in syrup, *i.e.*, currants bottled with a considerable amount of sugar. If you want to make a fruit pie out of the former of these bottles, you should strain off the juice and sweeten it, and it will

be best to boil the liquor first, and then let it get cold before you add the currants. The reason of this is, that the general principle in regard to the use of bottled fruits is to remember that the drawback, if there be any, is that they are already over-cooked. Red currants are very typical. We all know the red currant pie made from fresh fruit, in which the currants are whole, swimming in a ruby-coloured juice, calculated to make a child's mouth water as soon as the pie is open. We can all imagine a piece of such a pie in early childhood, in which plenty of fruit is heaped upon our plate, as well as crust, and the whole is tempered with a spoonful of brown sugar and another brimming one of Devonshire cream; we will imagine the day a hot one in August, and the pie and cream fresh from the ice closet. Contrast this with a pie made from bottled fruit. The currants in appearance differ as much as the rosy cheeks of a child at twelve and the withered ones of his grandmother. Again, we find in this latter pie, by some mysterious process, that it contains sufficient pips for at least five ordinary pies.

Bottled gooseberries are extremely useful, as they enable us in winter-time to serve other dishes, besides as a simple fruit pie. Bottled gooseberries make splendid gooseberry fool; and as the fool is rubbed through the sieve, our enemies the pips are judiciously left in the rear. Bottled gooseberries can also be utilised for making gooseberry sauce. Gooseberry sauce makes an excellent substitute for apple sauce, and can be served with roast goose or roast pork, as the case may be, and can be made at a very short notice when no apples are obtainable. The gooseberry fool, too, can be made on an emergency without cream, with the assistance of some Swiss milk and a couple of yolks of eggs.

In bottling fruit, you must proceed on the same general principles as you followed in making jam. First of all the fruit must be dry, and again we want the morning sun. There are various methods of bottling fruit, but after many years' experience we think you will find the following the best:—It is necessary, of course, to have the bottles of a suitable shape for the purpose. They must have wide mouths, into which must be placed bungs that fit exactly—for, remember, our chief point in view is to completely exclude the air after the bottling is over. The fruit—which, as we have already said, should be dry—should be dropped into the bottles, which, like the fruit, must be perfectly dry. The bottles are then placed in a large kettle, or saucepan—a fish-kettle is very well adapted for the purpose. If you have plenty of bottles, it is as well to surround them with wisps of hay, in order to prevent their knocking

against one another—thus preserving them from getting broken. Now fill up the saucepan or kettle with cold water, and put it on the fire to boil. Bring the water gradually to the boiling-point; when it has reached this point, do not let it boil furiously, but let it remain in that state that cooks generally call boiling very gently. Now watch the fruit in the bottle, as this is the only way in which to tell when the fruit is done. It would be quite impossible to lay down any exact time. Like cooking a mutton chop, nothing but experience will teach you. As soon as the fruit begins to look a little cracked is, perhaps, the best guide as to when is the proper moment to take the bottle out of the saucepan. You must now have ready on the fire a kettleful of boiling water. Directly the fruit presents this appearance—in the case of gooseberries, for instance, directly one or two of them show symptoms of bursting—take the bottle out, and instantly fill it up with boiling water; and the moment you have done so, and without waiting to take out another bottle, fit in the cork tightly, and tie it down while it is hot. If you like, you can place sealing-wax round the corks—not lighted sealing-wax, but some red sealing-wax dissolved in methylated spirits, similar to what is used in making corks air-tight in chemical experiments.

The chief difference between this recipe and those generally given in cookery books is the addition of water. According to general instructions no water is added, but the fruit left just as it is. We think that this recipe for bottling fruit, viz., the addition of boiling water, is superior, and well worthy of a trial. Again, some persons add sugar. This is just as easily added afterwards as at the time; for, remember, sugar mixed with the juice of any fruit is very apt to ferment.

Preserved Vegetables.—The subject of bottled vegetables is by no means so easy a one as that of bottled fruits. The fact is that persons do not sufficiently make allowances for climate. English fruits, such as currants and cherries and gooseberries, bottle easily; but fruits like raspberries do not bottle so well, although they make excellent jam. Things differ vastly in this way.

The great difficulty in bottling vegetables is to avoid fermentation. The truth is that nearly all the decent bottled vegetables known in this country come from France; and the largest purveyors of jams, pickles, bottled fruits, and bottled and tinned vegetables in the world, have informed us that they have never prepared vegetables in *this* country. Probably, the quick ripening of the vegetable has a great deal to do with the infinite superiority of French bottled vegetables to anything ever attained

by amateurs in this country. Again, these bottles are fastened and hermetically sealed by a process beyond the reach of private households.

However, there are many with a well-stocked garden who, after reading this, will nevertheless say, "Oh! but let us try." For the benefit of these we will give the result of our own experiments (which were fairly successful) some years ago; and, as climate may have something to do with it, we will add that the vegetables were from a garden in the neighbourhood of Tunbridge Wells.

We can take peas first, as chiefly wanted and most valued. Obtain some empty bottles, and having gathered the peas in a hot sun, and on a dry day, shell them out of doors on a large tray or newspaper, where they can be exposed to the sun for a time. This alone is a process very easy in the South of France, but often extremely difficult in *this* climate. The peas should be now placed in dry bottles and shaken well together, and the bottles set in a large boiling-pot of cold water, and treated in exactly the same way as we did our gooseberries, care being taken to have long corks ready to fit the bottles tightly. There are now two ways of proceeding after the peas begin to look tender from exposure to the heat—the bottle can be corked down, and a bladder tied over it; or the whole sealing-waxed over, and the peas put away *dry*. Some persons say the best plan is to bury the bottle in a dry part of the garden; but probably to put them in a box, and cover them with bran, would be still better.

Our own method, however, differed in the same way as our recipe for bottled gooseberries differs from those generally given in cookery books. We added water slightly salted, the idea being suggested by the fact that the French do so. As soon as the peas began to swell, we filled up each bottle with boiling water slightly salted; not brine, but salted like you would soup or beef-tea. Fix in the cork immediately, press it down, and sealing-wax it over as follows, *while the bottle is hot*; for, of course, as the bottle cools, there is a tendency to draw air through the pores of the cork. Have ready, therefore, some sealing-wax dissolved in spirit, and brush the corks over with this. The sealing-wax is drawn into the cork, and the bottle becomes hermetically sealed. Or another and better way is to have some coarse bottling-wax, which is sold especially for this kind of thing, melted by heat in a shallow iron or tin pan; and having wiped the neck of your bottle quite dry after corking up, take the bottle up, holding it with a cloth to prevent burning yourself, and, turning it upside down, dip the corked end into the melted wax and take it out again, in the same way that bottles of milk are sealing-waxed. This will give a good thick air-tight layer of wax over all; only you

must be sure that the cork and end of the neck are *dry*, else the wax will not adhere.

Young French beans can be treated in the same way, but they must be very young and tender. Old French beans can be preserved for a time in brine, soaking the brine out in fresh water before using. Another way of preserving French beans is to cut them up, gathering them while tender, and in dry weather. Then put in a jar a layer of salt, on which is placed a layer of beans, then a layer of salt and another of beans, filling up the jar with salt, and pressing down with a board. If properly done, they are very fair this way, the salt being, of course, soaked out before use, and none added to the water they are boiled in.

We have never tried the experiment, but it would be worth while to try dissolving a little salicylic acid or boracic acid in the boiling water bottled vegetables are filled up with instead of salt. Both are powerful antiseptics, and the slightly sweetish taste of salicylic acid, which is objectionable for meat, is not so in vegetables. The acid should not exceed one part in 1,000 at most.

Probably, it would be as impossible to compete with France in bottled vegetables with vegetables picked in Kent, as it would be to make macaroni from Kentish corn. Those who have seen Neapolitan wheat will know how brown is the exterior and how snow-white the interior, all owing to the sun. So in France the vegetables have the advantage of an invariable climate, which does not consist of three hot days and a thunderstorm. On the other hand, vegetables and fruits requiring much moisture, mature best in England. Strawberries, for instance, require rain, and English strawberries are far the best. Apricots, on the other hand, require sun, and so the French are best; indeed, really ripe apricots can hardly be grown in England, except under glass, without a great number being left unripe at the close of the summer. Still, very decent peas and French beans can be preserved in the way we have described.

Pickles.—There is a good old saying that “comparisons are odious,” and on this ground we will refrain from drawing comparisons between home-made pickles and those that can be bought. It is very hard indeed for housekeepers to compete with machinery, and with any style of cooking that is done in a large manufactory. The most striking instance of this is to make a contrast between the best home-made wine and a bottle of even the cheapest wine that can be obtained from the wholesale wine merchant. Many years ago there was a just outcry against all kinds of pickles. The old-fashioned idea of good pickles was to have a brilliant colour; and in

order to obtain this colour, recourse was had to copper utensils. Old-fashioned cookery books contain directions for making pickles which, if given in the present day and carried out, would probably result in the cook getting a long term of penal servitude. I will quote one mentioned by Dr. Hassall, when writing on the subject of the adulteration of food. The recipe is headed, “To make green,” and commences, “Take a bit of verdigrise, the bigness of a hazel nut, finely powdered, half a pint of distilled vinegar, and a bit of alum powder, with a little bay salt.” It is needless to proceed further. This, however, is now all a thing of the past. The march of intellect has even condescended to take pickles along with it in its strides forward, and the result is shown in illustrating that grand old maxim, “Honesty is the best policy.” We have it on the authority of one of the largest manufacturers of pickles in the whole world, that the sale of pickles in the present year is more than ten times as great as it was thirty years ago.

There are various methods of pickling, and each housewife, as a rule, maintains her own way is best, and no amount of argument will make her budge an inch. Of course, like fruit, it is very important that the vegetables for pickling should be picked at the right season. The chief season seems July and August, as it is during these months that we must pick for pickling purposes the following vegetables: onions, walnuts, gherkins, cucumbers, cauliflowers, and French beans. The vegetables must be ripe, but not over-ripe, and perhaps the greatest difficulty experienced is in that of walnuts. If walnuts are picked too late, and the shells formed too hard, they will not pickle at all, and the best method is to take a strong needle and run it through the walnuts. If you find that the needle stops, and you cannot push it right through, it shows that the walnuts are too far advanced to be pickled.

We will now illustrate the various methods of pickling by taking the simple case of pickled onions. The onions, of course, must be the small ones, sold as pickling onions. The outer skin should be removed, the onions placed in a jar or bottle, then add a pint of cold vinegar, a teaspoonful of allspice, a teaspoonful of black pepper, and three or four chillies. These onions will very soon be fit to be eaten, probably at the end of the month. This is one of the simplest recipes known. Another, and perhaps more common method, is to soak the vegetables first in some salt-and-water, and the old-fashioned method is to add salt to the water till an egg will swim. After more or less soaking—walnuts are soaked about nine days in three brines—the vegetables are strained off from the brine, walnuts being left to dry in the sun till black,

and then vinegar is added that has been boiled up. Of course herbs or spices must be added as well. These spices consist of peppercorns, all-spice, ginger, coriander seeds, &c. As a general rule an ounce of peppercorns would go to every quart, whilst half a teaspoonful of coriander seeds would go to the same quantity, and half an ounce of ginger to the same.

If you boil your vinegar, remember that it is just the opposite to boiling stock. The more you boil the latter, the stronger it gets; the more you boil the former, the weaker it gets. A thoughtful cook would know this, from the fact that when they make pickles, using boiled vinegar, the whole house smells.

The best vessels in which to keep pickles are undoubtedly glass jars or bottles. Jars that have been glazed should be carefully avoided, as very often the glaze contains lead; and if pickles have been kept for a long time in a glazed jar, they may produce symptoms of lead-poisoning—indeed, cases have been known of lead-poisoning ensuing from glazed vessels being used in the manufacture of home-made wine. Another point to be observed is that the vinegar takes some time to soak into the vegetables, and consequently it is always advisable to let the vinegar rise to a considerable distance in the bottle above the level of the pickles. As the vegetables absorb the vinegar, the surface of the fluid lowers gradually; and were it to lower so that any of the vegetable was left uncovered by the vinegar, the top

of the vegetable would get bad, and the whole bottle be spoilt.

One most important point that must not be forgotten is tying down the pickles, so as, as much as possible, to exclude the air after they are finished. For this purpose there is nothing so good as pig's bladder. Paper is of no use whatever.

In conclusion, a few words will not be out of place on the use of pickles. In this country, at any rate, where pickles are used very largely, the only idea seems to be that they are an accompaniment to cold meat. Now and then you will see a working man lunch, or rather dine, off bread and cheese, his appetite being stimulated with a plateful of pickled cabbage. Pickles, however, can be used for a variety of cooking purposes if properly managed. We have already referred to *sauce piquante*. Pickles can be chopped and mixed with Mayonnaise sauce, and, with the assistance of a little French mustard, converts it into Tartar sauce. Pickles, again, can be chopped up and mixed with gravy and cayenne pepper, and make very excellent devilled sauce, especially with grilled salmon for breakfast. The chief reason that English cooks fail is that they make all these sauces too acid. This difficulty is easily avoided by simply remembering that you can get rid of the greater part of the acidity of every kind of pickle, by heating them in a small stew-pan and letting the vinegar evaporate.

But one word in conclusion. Whenever you use pickles in cooking, avoid copper vessels.

FIRES AND FIRE INSURANCE.

FIRE and Life Insurance, though very different things, are usually combined at the same office. We are at present mainly concerned with insurance against fire—that deadly foe which sometimes breaks out in a wholly unforeseen manner, and wrecks not only the property, but the home and the lives of the dwellers therein.

It is clearly the duty of every householder to insure his property, stock-in-trade (if possible), and goods and chattels, at their fair full value; for if a fire does occur, there is quite enough trouble and inconvenience, irrespective of pecuniary loss. Great care, however, must be taken that the statement is fair and the value not exaggerated, because if the Insurance Company has reason to suspect, and is able to prove, that the articles insured were not worth the sum they were insured for, it can take action and refuse to pay.

It is a very usual clause in a lease for the owner of property to require that the tenant should insure

it in a mutually-agreed office for a certain sum of money. It is, however, quite as usual, and more proper, for the landlord himself to insure his own property. Too often, if this be not so, and the premises are burnt down, the tenant is still liable to rent for the remainder of his term, as well as for re-building. This should be resisted by a tenant, who should have a "fire clause" in his agreement, as already hinted in Vol. I.

Risks.—There are sundry risks, however, against which no office will insure; and they are usually, if not invariably, summed up as risks by or through invasion, riot, civil commotion, military or usurped power, or the acts of the Queen's enemies. Loss by explosion is also excluded, unless loss or damage be caused by explosion of gas in a building not forming part of any gas-works. Loss or damage by lightning, whether the property be actually set on fire or not, is deemed damage by fire in most cases. If a house,

warehouse, or any other public or private building, be so much shattered by earthquake that combustibles come in contact with fire, and a conflagration ensues, it cannot claim recompense from an insurance office, any more than can buildings that may be riddled with shot or set fire to by a shell in any country so unhappy as to become a battle-field. The acts of the Queen's enemies fortunately are few, yet houses and offices have within the last few years occasionally suffered from dynamite explosions, which could only come under that head; and people who had insured luggage and left it in the cloak-room of Victoria Station the night when there was an explosion and consequent fire, have a vividly painful remembrance that the railway company was not responsible to them, nor could it obtain any reparation itself from Fire Insurance societies, because that disastrous event was clearly the work of the Queen's enemies.

There are also certain businesses with which Fire Insurance offices will have nothing to do, on account of the inflammable nature of the stock-in-trade, such as gunpowder-mills, oil storages, match factories, &c.; and there is one thing which in modern days affects a large number of country-houses which will, perhaps before long, be legislated for, and that is the storage of paraffin for domestic consumption. Those who have only one or two lights to furnish, and can only afford to buy a quart or even a gallon at a time, are comparatively safe, for it is supplied to them in a tin can. But too many families living in large houses have their paraffin in a cask, and draw it off, like so much water, by means of a wooden tap or spigot; and, even if kept in an outhouse, this is distinctly dangerous. Iron tanks, to contain from twenty to forty gallons, ought to be insisted on, for this is the only way of storing sufficient for the wants of a large household with any amount of safety.

Necessary Regulations.—An insurer against fire must not alter his premises so that they no longer agree with the description of them in the policy; when material alterations are contemplated, notice should be given to the office. A fire insurance policy only protects goods so long as they remain in the same house as when the policy was effected. On a change of residence, notice should be given to the insurance agent, and the policy altered accordingly. A house should be insured by itself, and the contents, furniture, pictures, clothes, &c., in quite a separate insurance.

If, after the Insurance Company has undertaken the risk, anything done to the property increases the danger of fire, the assent of the company should be endorsed on the policy, or the insurance may cease to hold good. Policies in many cases cease to be in

force if the insured property changes hands in any other way than by will, or the operation of the recognised law of the land, unless due notice is given to the Company. Any material misdescription of property insured, stating its value to be greater than it really is, or its position less dangerous than it is in reality, or the omission to mention any risky contiguity, in a general way renders a policy null and void. There are also certain kinds of property which fire insurance policies generally are not supposed to cover: for instance, property held in trust or on commission, unless expressly described and insured for. Some Companies exclude china and glass. Jewellery, unless insured as a separate item at a higher rate, is not regarded as coming within the range of articles insurable. Scientific instruments, curiosities, works of art, MSS., Government stamps, and patterns and models, must be specially mentioned; and deeds, bonds, securities for money, bills of exchange or promissory notes, are not recognised; neither in many instances is damage by fire to property that is ignited through its own spontaneous fermentation or heating. There is often a condition in policies upon ordinary households that no picture or other work of art shall be claimed for more than £10, and no musical instrument (such as a piano) more than some sum named. It is very much the best way, when a list and total has been made out, to get the agent, if possible, to come and see over the house, and check it. Nearly any agent will do this, and it simplifies matters materially.

Special Risks.—Some Insurance Offices say that they have ceased to look upon or enumerate any risks as special; but others ask nearly double terms for thatched buildings, even though no hazardous business be carried on therein; and others, again, are ready to make special agreements on mills, manufactories, &c. Marine Insurance is a branch apart, and property in foreign countries is insured according to the risk. Merchandise on ships in docks or stored at wharves may also be insured, and so may goods in transit by road or rail, or valuable property housed temporarily. In a general way the rate of insurance for a building is applicable also to its contents.

Insurance of Rent.—Many offices make an arrangement that owners and occupiers of premises may provide against loss of rent, through the occurrence of a fire, by insuring a sum that does not exceed one year's rent, the proportionate part of which sum will be recoverable under the policy for the period during which the premises remain uninhabitable after a fire; and the rates for this insurance of rent are just the same as those for the insurance of the premises.

Conditions of Average.—Conditions of Average are common, but mostly in business matters. Where a sum of money assured is declared to be subject to those conditions, if the property so assured shall, at the breaking out of any fire, be collectively of greater value than the sum insured on it, the office will make good such a proportion of the damage as the sum insured bears to the whole value of the property at the occurrence of the fire.

Precautions against Fire.—It is scarcely necessary to say that too many domestic precautions can hardly be taken. Damp shavings or firewood, which must be dried before it is ready to use, should be dried near or on the kitchen-stove during the day or evening, and removed to a distance before going to bed. Live coals should never be carried about in a shovel, as they are sometimes when bedroom fires are wanted late, just to undress by. It should always be the duty of some responsible person to go round the house the last thing at night, to see that all lights are out, and fires in a safe condition.

It is as well to know, especially in an old house, where there is a good deal of panelling, &c., that wood, brushed two or three times with a strong solution of silicate of soda, is practically incombustible. Textile fabrics should be dipped in saline solutions, such as phosphate and sulphate of ammonia and borax.

Chimneys on Fire.—So fruitful as causes of extensive conflagration have chimneys on fire proved, that for many years any one observing a chimney on fire has been encouraged to communicate at once with the nearest fire-engine station, whereupon an engine is sent off, and the owner of the offending chimney has to pay a certain fine. This, however, rarely occurs, and chimneys that catch fire through being foul with soot are generally under amateur and domestic control. It should always be remembered that kitchen chimneys need frequent sweeping; those connected with the close stoves generally called kitcheners should not go longer than six weeks; and all chimneys should be swept either in the spring, when fires are left off, or early in the autumn, before regular fires are begun.

In case a chimney takes fire, the readiest way of extinguishing it is to stop the draught of air ascending from the fireplace. Shut all the doors, rake out the fire if possible, or throw plenty of salt or brimstone on it, and fix up before the fireplace, with nails—or steel forks, if nothing better is at hand—a thick piece of old carpet or drugget or doubled blanket well soaked in water, which will be for the moment almost impervious to air. These precautions taken, the fire will usually burn itself out in a very short space of

time; and in a straight chimney, or one that is nearly straight, and has no beams near it, the mischief usually stops short at the temporary inconvenience. But in the case of old-fashioned chimneys, with nooks and crannies and twists in them, or of comparatively new chimneys made in an old house, there are often places where the burning soot lays and smoulders, and, when no one suspects, bursts out into flame, and sets fire to the nearest inflammable substance.

In Case of Fire.—Captain Shaw once gave the following advice :—

“In case of fire, give the alarm at once, and make every effort to escape and to save others by whatever mode of egress may be available; but in doing so, remember to shut and keep shut all doors, windows, and apertures of every kind through which air can be admitted, thus checking the combustion and giving all concerned more time to get out, or, failing this, to come and show themselves at a front window or other prominent part accessible to our ladders. In short, all persons endangered should rely on their own resources during the first moments of an alarm, and after a period which they can calculate for themselves, according to the locality in which they live, they may expect an attendance of firemen with proper appliances, and the skill and energy to use them to the best advantage, regardless of all personal risks, so long as there is a hope of saving life or property. In one word, the public may rely on us to a very great extent, but must not do so altogether, as, in many cases, our success or failure depends absolutely on what they themselves do, or omit to do, previously to our arrival.”

Dr. Andrew Wynter's plain directions for assisting people to escape from premises on fire have never been surpassed, so we make no apology for repeating them.

Be careful to acquaint yourselves with the best means of exit from the house, both at the top and bottom.

On the first alarm, reflect before you act. If in bed at the time, wrap yourself in a blanket or bed-side carpet; open no more doors or windows than are absolutely necessary, and shut every door after you.

There is always from eight to ten inches of pure air close to the ground; if you cannot therefore walk upright through the smoke, drop on your hands and knees, and thus progress. A wetted silk handkerchief, a piece of flannel, or a worsted stocking, drawn over the face, permits breathing, and, to a great extent, excludes the smoke.

If you can neither make your way upwards nor downwards, get into a front room; if there is a family, see that they are all collected here; and keep

the door closed as much as possible; for, remember, that smoke always follows a draught, and fire always rushes after smoke.

On no account throw yourself, or allow others to throw themselves, from the window. If no assistance is at hand, and you are in extremity, tie the sheets together, and, having fastened one end to some heavy piece of furniture, let down the women and children one by one, by tying the end of the line of sheets round the waist, and lowering them through the window that is over the door, rather than through one that is over the area. You can easily let yourself down when the helpless are saved.

If a woman's clothes should catch fire, let her instantly roll herself over and over on the floor; if a man be present, let him throw her down and do the like, and then wrap her in a rug, coat, or the first woollen thing that is at hand.

Bystanders, the instant they see a fire, should run for the fire-escape or to the police-station, if that is nearer, where a jumping-sheet is always to be found.

To these an old fireman has recently added the following, *à propos* of a fatal fire at Portsmouth:—

1. Never open the door of a burning room, but close it if possible.

2. If a shut-up room is suspected to be on fire, *feel the door*; if hot, it is madness to open it.

3. Never attempt to extinguish fire until all means have been tried to save life.

4. Under no circumstances, and for no consideration, pull down the shutters of a burning shop.

Partial Fires.—When a fire does take place in a room or any part of a house, and the inmates have

succeeded in putting it out, the circumstances should always be detailed to the Company with whom the property is insured. They have every reason to be grateful for the prompt and successful action which has probably saved them from a heavy liability, and will most courteously send an official down to inspect, and will invite the householder to make a claim. Curtains may have been destroyed, carpets damaged by fire and water, ceiling and walls blackened, so as to necessitate re-papering and whitewashing. A certain sum covering whatever work has to be done and whatever goods have to be replaced can be mentioned, and, if the claim is really fair, will in most cases be cheerfully paid, as is only due to people who pay annually the interest on their policy of fire insurance and take every precaution against accident.

Notice should, however, be given and claim made within a certain number of days, and vouchers, proofs, and explanations should be forthcoming, and, if required, a statutory declaration of their truth. The Company may itself replace or make good the damage, instead of paying the amount claimed; and if the property should be insured in two Companies, each will pay only its due and proper proportion.

One great cause of these partial fires would be removed if any one could invent a match-box that would quite prevent the spilling or dropping of vestas or any other matches on the ground, where the next passing footstep may ignite them; and one great precaution would be taken if every one kept on their premises the hand grenades, which, though made by one or two firms, are almost identical in composition, and are the most valuable things for extinguishing a sudden fire that have ever been invented.

PAINTING ON PORCELAIN, GLASS, AND WOOD.

THE mania that has arisen during the last few years for home decoration of all sorts seems to have finally settled down into a craze for painting, and every girl who can wield a brush at all, now imagines that she is fully competent to ornament plaques, panels, tables, pottery, to say nothing of wooden kitchen utensils, tambourines, and drain-pipes. Everything is made so easy, that even she who cannot draw has the advantage of being able to get patterns which only require transferring to the object about to be painted. Tinted illustrations may also be had, which anybody can copy who has the smallest appreciation of colour. It is as well for every amateur who possesses, or who thinks she possesses, this talent for painting, to make a few experiments upon various surfaces and materials, in order to find out

with what she succeeds best. A beginner will probably turn her attention first to pottery painting, under the idea that the smooth surface of china is easy to work upon, and that she will be able to turn her productions to good advantage. After a time she will, unless she has a very decided bent in this direction, become weary of waiting while the various firings are undergone; and after one or two failures, which are sometimes quite unavoidable, she will take up a form of the art which she can herself superintend from beginning to end.

It is well to think twice about painting on china, as the colours required are quite distinct from those needed for other branches of painting, and are useless for other purposes. No amateur should go to any great expense for colours and materials

until she has, at any rate, gained some slight knowledge of the rudiments and general principles of the art, or until she has had a few lessons to explain the practical details connected with the preparation of the colours and the management of the palette and brushes. Minute descriptions of the colouring and shading can, of course, only be given by individual tuition, and in such an article as this it is a sheer impossibility to do more than give such general hints as can be easily applied by those who have some knowledge, however small, of the subject.

Overglaze Painting.—The first thing to be decided is whether the student will undertake overglaze or underglaze painting. The former is most generally preferred by amateurs. In this, as the pottery has already been glazed and fired, the colours are not subjected to so much heat, and consequently they change less. Underglaze painting is done upon what is known as biscuit china or bisque, before it has either been glazed or fired at all. Many of the terra-cotta plates, vases, and plaques are of this description, and, as the pottery is extremely porous, they are often entirely covered with paint, in order to lessen the difficulty of getting clear outlines. For overglaze painting, tiles are always convenient for a beginner to practise upon. In choosing, they must be carefully overlooked, inch by inch, to be certain that there are no specks or flaws upon them which may be visible under the colour. If the amateur is particularly anxious to begin with a plate, she should be equally careful in her selection; but, owing to its concave surface, she will find it more troublesome than a tile to paint upon. As the nature of the colours is such as to cause them to change considerably under the action of heat, it is well to begin by making a key to the different tints upon a spare tile. Rule it into a number of small squares, and fill in each square with a different colour. After each colour has been used, fill other squares (possibly a second tile will be needed) with the principal combinations of colour likely to be wanted in the work. It is well to affix a number to each square, and on a sheet of paper to note these numbers with the description of the colours to which they belong written against them. The amateur should then send these test tiles to be fired; and when they are returned to her, she will be able to compare the colours with those in her bottles, and will be able to judge—approximately, at any rate—how they should be mixed and laid on. Test tiles are to be bought ready-made, but the artist will learn more if she makes these experiments for herself. She will find that carmine and such vivid shades of red, if laid on at all thickly, will be purple when baked; also that she will be unable to mix any shade of red

satisfactorily with other colours. Black and brown do not undergo any great change, but green increases in tone under the action of heat. White is not easily blended, and is generally applied after each firing. Yellow, too, is another tint which suffers much in the kiln, whether used by itself or in combination with others.

No amateur should be tempted with an expensive box of colours till she is quite certain that she is succeeding with the work, and is not likely to weary of it after a few attempts. It is far better to buy the colours separately, as the need for them arises. Hancock's Worcester enamel colours are the most generally satisfactory, and are in the form of powder. They vary in price from 6d. to 2s. 6d. a bottle, but the worker will soon find that she can manage perfectly well without the more expensive Rose du Barry or Royal Purple. Liquid gold and silver, too, are costly; but these it is of no use to have in a cheap quality. If expense is an object, it is better to do without them altogether. The Lacroix colours are to be had from any good artists' colourman. These are mixed with oil, and as they need only the addition of a little turpentine and oil of lavender, a considerable amount of trouble is saved. The amateur will, however, prefer the powder colours as soon as she gains a little experience in her art, as the oil is apt to become too liquid, and the colours, in consequence, are difficult to apply evenly.

The brushes used for water-colours are best for china painting; and though there is nothing to equal a good red sable, the beginner will probably find she is able to manage very well, till sure of her power, with an ordinary camel's-hair. Three brushes will be enough at first, and care must be taken to choose only such as fit firmly on their sticks. If sables are selected, the sizes known as "Crow," "Large Duck," and "Goose" will be the most generally useful. A nest of saucers, or a tile palette with sloping compartments, is more convenient for mixing the colours upon than a flat slab. A palette-knife, small pieces of sponge, a penknife, transfer paper (red is preferable to black), odds and ends of soft old linen free from fluff, pencils, and a small penknife, should also be at hand. A mahl-stick is of use if the painting is such as can be executed upon an easel, and a rest for the hand is an absolute necessity. Any amateur carpenter can make one, or it may be had ready-made for about 2s. It consists simply of a flat piece of firm wood, from eighteen to twenty inches long, and from three to four inches wide. At either end are fixed two cross-pieces about an inch high and the width of the rest itself. These stand on the table; the tile is, as it were, bridged over by the flat band of wood, so that the worker can proceed with her painting without injuring it by bringing it in contact with the

hand. In china painting, the utmost cleanliness regarding all the brushes and palettes is of the greatest importance, and after every time of using they must be thoroughly cleaned by wiping them with turpentine, and then with warm soapy water. If the brushes seem hard when required again, they should be dipped in turpentine and warmed.

The tile must be well polished, and freed from grease, before any colour is applied to it. This is most effectually done by polishing it with a rag dipped in spirits of turpentine, spirits of wine, or, failing everything else, Eau de Cologne. Should the weather be very damp, it is often an improvement to place the tile in a moderately warm oven or before a fire, to dry it thoroughly. When cool, it is ready to be painted. Care must be taken to handle it by the edges or the back only, not to allow the fingers to rest at all upon the front.

Much of the beauty of the design must depend upon whether the amateur is artist enough to be able to draw it directly upon the surface of the tile with grey paint and a small brush. If this is not the case, she must draw or trace it upon thin but strong paper; lay the transfer paper, prepared side downwards, upon the tile; place the pattern over it; and with the point of a bone crochet-hook, or some similar tool, go carefully, and with a firm even touch, over all the lines on the paper. When the papers are removed, there should be a clearly-defined replica of the pattern upon the tile. The sheet of transfer paper should be carefully kept, for the worker will soon find by experience how infinitely superior worn paper is to new.

To apply the colours, place a small quantity of one of the powders on the palette, rub down any lumps there may be with the knife, add a very little fat oil of turpentine—it is almost impossible to get too little—and when perfectly smooth dip the palette knife, wiped clean from any trace of colour, into the turpentine, and incorporate this evenly and regularly with the moistened colour. Additional turpentine may be added with the tip of the knife, if necessary. Fat oil of turpentine may be made a few days before it is wanted for use, simply by pouring some spirits of turpentine into a shallow saucer, and setting it aside until most of the spirit has evaporated, leaving the thicker matter behind. Some amount of practice will be necessary before the beginner is able to judge how much turpentine and how much fat oil are necessary. If she adds too large a quantity of oil, it will cause the colours to blister when the painting is fired; if she uses too little, they will settle into streaks. If the painting is to be sent to the kiln directly it is finished, less oil may be used than if some time is to elapse before firing. If too liquid, the beginner will find considerable difficulty in getting the colours to set

smoothly, and will have almost equal trouble if they are too cloggy and imperfectly incorporated with the medium. If there seems to be too much oil, much of the superfluity may be removed by holding the tile before the fire. The colours, if mixed in the saucers, and not used all at once, will keep good for a day or two if covered over and kept free from dust. The nests do this perfectly.

It is advisable to begin in the middle of the article to be painted, and to finish that off as far as possible before doing much at the edges. The background should first be put in. The method pursued is much the same as that followed in painting with water-colours. The first wash should be put in with free bold strokes, and should be allowed to dry before the details are attempted. These are managed by laying on the high lights first, and gradually adding the shading beyond them, so that the tints blend imperceptibly, without leaving any hard streaks or ragged lines. The shadows should be added with a stippling or even cross-hatching action of the brush. No tint must be laid over another until the first one is absolutely dry, and all the more delicate touches on the pottery should be left until after the first firing. When the tile is returned, and provided, of course, that it is so far quite satisfactory, the artist must strengthen the shadows, add a little local colour, paint in the white for the second time, and send the china once more to the kiln. Many artists advocate the use of flux with the colours, under the idea that they greatly gain in lustre. Some tints naturally become brighter and more glossy by the very action of firing, and require no addition; others are all the better for its use. For this reason a beginner should use her colours without this, until she has gained experience enough to know which will be improved by it, and which will not.

Should the amateur be ambitious enough to wish to try the effect of gold, she must prepare her porcelain by applying the paste sold for the purpose to all those portions that are to be gilded, before the first firing, using one or more coats, according to the height of the relief. Gold is sold ready-mixed with turpentine, but silver requires more preparation, as it is to be had in powder only. It must be well rubbed down on a slab, and mixed with fat oil. In this stage it may be bottled until required for use. It will have to be laid on much more lavishly than gold would be, as it is not of so thick and close a consistency. Platinum is sometimes used instead of silver, as it is not so liable to tarnish, and will bear firing more than once if necessary. Good imitations of bronze may be also made by the use of Hancock's Bronze Powder; but when they have been fired, they require to be scoured with a little of the very finest silver sand. Gold, silver, and platinum may be

burnished in the usual way with an agate burnisher, such as is used in illuminating. The surface of the paste should be as smooth as possible before the metal is applied. When the work is sent to the kiln, after it has been gilded, it will not be subjected to so much heat as when there is no metal upon it. This will influence the depth or intensity of the colours used before the first firing; and for this reason it is better for a beginner to wait, before using gold, until she has gained a little experience, and has become thoroughly familiar with her colours. No amateur could do better than begin her pottery painting by executing some tiles, or even a plate or two, in one colour only; and until she tries it, she can have little idea of the success often gained by a design in sepia, like an etching, or in dull red, like an autotype.

A large vase, such as that in Fig. 1, mainly because of its curved surface, should not be attempted until a considerable amount of experience has been gained in painting flatter objects, such as tiles and plates. The artist will find it impossible to manage an article of such a shape as this without a rest specially made for the purpose. This consists of a wooden framework with a hollow space in the middle, which supports the vase or eup. An impromptu rest may be made of a wooden box large enough to hold the vase easily when laid at full length inside it. Fill it in with sand, putting so much that when the vase is placed upon it the highest part will equal in height the sides of the box. Add more sand, so that it fills in the spaces made by the curves of the vase, and keeps it steady. Get a sheet of cardboard, cut out in the middle of it a space equal to that which is to be painted on the vase, and lay it on the top of

the vase. The porcelain is painted, as it were, through this hole in the centre of the card. Poppies form the ornamentation for the vase in the illustration, and they are ever a favourite flower with the amateur. Yellow poppies are less hackneyed than red, and since the introduction of the Shirley variety there are an immense number of shades of crimson, rose colour, and pink to be had. In so large a flower the colours will require laying on as flat washes, which are worked up after the first firing. It must be remembered that red gains in intensity in the kiln, so the flowers should be painted of rather a paler tint than in Nature. It is well to begin with the lightest shades of the leaves, and to place them only where required, not one above another. The edges must be softened down to get them to mingle well. While the first wash on the leaves is drying, the flowers can be commenced; and by the time they are as far advanced as the leaves, these will be ready to be worked up. The slight ornamentation round the neck of the vase may be gilded with good effect.



Fig. 1.—VASE OF OVERGLAZE PAINTING.

Underglaze Painting.

—Upon terra-cotta either powder, water, or oil colours may be used, according to the fancy of the artist. Terra-cotta can be had prepared for painting upon in red, cream, grey, white, and black. All these will stand firing except the black; but this is far more pleasant to work upon, owing to its being slightly glazed, and therefore less porous than the others.

Powder colours are sometimes used, but are prepared in a slightly different manner to those employed in overglaze painting, as they have to be subjected to a greater degree of heat. Reds lose, blues darken, yellows also lose in intensity. The colours in their powdered form are dull in comparison with their

ultimate tint; and the worker will feel, when she first begins to use them, as if she has been suddenly stricken with colour-blindness, so very different are the hues to those which she has been accustomed to call by the same name.

The powders are mixed much as already described, with fat oil and turpentine, or with gum-water and glycerine. As the china is absorbent, it is necessary to paint it over first with gum and water, which acts in the same way as size in preventing the colours from soaking into the porcelain. The gum must be allowed to get perfectly dry, and the design is then transferred to the plate. One disadvantage of terra-cotta painting is that a mistake can be erased only with the greatest difficulty. A piece of bread will remove the marks made by the transfer

paper; but if a wrong colour has been used, the case is hopeless. A thin coat of white paint should be laid on the design first, but should not be placed on the deepest shadows. The colours must be mixed with a rather larger proportion of oil than for overglaze painting, and must be laid on as washes rather than in any more delicate style. It is always a mistake to attempt to lay one wash over another, unless absolutely necessary. The beginner will find it difficult to prevent the colours from running, and

should work from the centre of the design outwards, so that the colour becomes gradually spread over the whole of the space between the outlines. Should the tints show signs of becoming dry too soon, a minute

quantity of rape oil may be added to soften them. When the work is returned from the kiln, the finer portions of the shading require touching up and finishing off, this time with overglaze colours. Red is a tint which it is always better to add in enamel paint after the first firing.

The plaque in Fig. 2 is a good specimen of what may be done in underglaze painting, but the shape and general make of irises render them too difficult for the worker to attempt on terra-cotta, unless she has had some previous experience in flower painting. Such dark flowers,

too, as purple irises will need very little white, this being laid on only at the edges where the blossoms catch the light. Those in the plaque illustrated are the common yellow flags of our streams and water meadows.



Fig. 2.—PLAQUE FOR UNDERGLAZE PAINTING.

If oil or water colours are used upon terra-cotta, no firing is required. In working with oils, Roberson's medium is the most satisfactory among many others. Here the shadows must be put in first, the lightest portions last. Varnish may be used on the terra-cotta if required; but if the colours

look better dull than glossy, they may be mixed with turpentine instead of medium. The worker in oils will find an infinite variety open to her, and many good copies are to be found in any museum which includes a collection of antique pottery.

In using water-colours, the first thing to do is to size the porcelain, to prevent the colours from "running." Gelatine, lavender balsam diluted with turpentine, or the size specially sold for the purpose, may be used. The sizing must be done with a large brush and with a bold free sweep, or the surface will be irregular; the work cannot be proceeded with until it is absolutely dry. The design is then sketched in with Chinese white, and white is laid over all those parts on which the least degree of shadow falls. Meguilph is often used as a medium, but a new preparation, called Mirrorine, has lately been brought out, which claims to be so substantial that fancy china may be decorated with painting by means of it, and require no firing. Needless to say, such china is not solid enough as to colour to bear hard usage and frequent washing, such as dinner and dessert plates have to endure. As in all water-colour painting, the lightest shades are laid on first, for they cannot well be added afterwards. It is this reversing of the proceedings which makes it difficult for the amateur who can paint well in oils to succeed with water-colours also. When the painting is dry, it is made far more durable by being painted over with the medium; and when this is hard, a coat of copal varnish may be added. Some artists varnish the design only, others the whole surface; others disapprove of its use altogether. As a rule, varnishing the design alone gives the best effect.

Pebble Painting.—A surface not unlike terra-cotta is to be found on large pebbles from the seashore, which, when painted, serve well as paper-weights, especially if one side is flatter than the other. The amateur carpenter may let them into the corners of large picture-frames, casket lids, or

fancy tables, and they then form a pleasing memento of a summer holiday. Such a pebble is shown in Fig. 3. One should be selected with a smooth surface, free from any cracks or irregularities. It must be well washed, and any tiny holes or crevices there may be, filled up with a cement made of glue and whiting. The oval space to be painted must be coated with Chinese white and meguilph (for water-colours) or flake white and gold size, or Roberson's medium (for oils). Enough has been said to show the worker how to sketch the outlines, and, as usual, the painting must be

allowed to get dry after the first washes are laid, and before it is finished off. The painting may be as delicate as the artist can make it; and when finished, should be carefully varnished with copal varnish, and allowed to dry. If the stone is a promising one, it is sometimes advisable to have it polished by a lapidary, and the surface will then resemble overglaze rather than terra-cotta, and will need no varnish.



Fig. 3.—PAINTED STONE PAPER-WEIGHT.

Shell Painting.

—The inside surface

of large flat shells is a pleasant substance for painting on either with oil or water colours, the mother-of-pearl lining forming a very pretty background. The shells require to be thoroughly cleaned before any paint is laid upon them. This is done by rubbing them with hydrochloric acid till they are free from irregularities caused by dirt or mud. They should then be dried by rolling them in hot saw-dust, and polished with a leather. Shells that are naturally dull outside may be varnished or rubbed with Tripoli powder, then polished with olive oil. Either oil or water colours may be used for the ornamentation, and shells thus painted are shown in Figs. 4 and 5 respectively. The method pursued does not differ from that in painting upon pebbles or any other smooth surfaces, either Mirrorine or Roberson's medium answering well upon shells. They should be thinly varnished when the painting is complete, and then may be used as pin-trays, or may be mounted upon plush backs as ornaments for brackets or small cabinets.



Fig. 4.—SHELL PAINTED IN OILS.

Painting on Glass.—The amateur artist who is disposed to take up painting on glass will find that she has an even larger field for her energies than when she confines her attention to china alone. She may use plain clear glass, ordinary ground glass, coloured cathedral glass, and the more fanciful kinds, such as crystalline, pearline, and many others. The variety of subjects, too, is very great. If the glass is fixed in a frame to hang against the wall, the design should be such as would naturally be raised slightly above the line of sight. For instance: the bird on the mirror in Fig. 7, and the spray of blossoms in Fig. 8, can be appropriately raised, but the lupins and iris in Fig. 6 would have a decidedly eccentric appearance if placed high up on the wall, because they are depicted on the glass in

their natural and growing position, which is, of course, nearer the ground. The screen in Fig. 6 is painted upon clear glass. It is intended for a fire-stove ornament, and is arranged with a panel of crinkled gold paper, so managed that it can be removed at will, thus allowing the fire in winter to be seen through the glass as the screen stands near the fender. It is this power of moving the back when required that makes white glass mounted over cardboard covered with gold paper more satisfactory than crystalline, for use as a fire-screen. For panels of doors, folding-screens, and panels, crystalline glass may be used, backed with tin to resemble frosted silver, or with yellow to look like gold.

The materials required for painting on glass are much the same as those employed in china painting with oil-colours. A wooden palette is to be chosen in preference to a slab, and two dippers—one for the turpentine, the other for the medium—should not be forgotten. Mirrorine is an excellent medium for ordinary glass painting; but if the colours are required to be transparent, the transparent mirrorine medium, also introduced by Miss Eliza Turek, is of the greatest use. This, being of a thinner consistency than the ordinary medium, enables the colours to be laid on in flat broad washes, by means of which good imitations of stained glass may be made, and mounted as lamp or candle shades, and blinds.

When a mirror is to be painted, it is always well to have it framed before the artist does her part, as it will then not have to run the risk of being injured in



Fig. 5.—SHELL PAINTED IN WATER COLOURS.

the workshop. The glass must be first thoroughly cleaned with turpentine, and afterwards polished with a leather to remove every particle of grease. Some workers like to paint with the glass resting in an easel, others prefer to place it in a sloping position on the table. In any case, the reflection of the artist's own face as she is beginning to paint will be found rather confusing, and she will find it a great relief when she has laid on sufficient colour to blot this out. Care should be taken to place pads of soft cloth behind the glass, especially if there should not be a wooden back to it, to avoid scratching off any of the silvering. The design, if it cannot be drawn straight upon the glass, must be transferred in the manner already described for porcelain painting. If the glass is clear, the design may be drawn upon a sheet of paper, which is laid under the glass, and the outlines then followed with a very fine brush filled with grey paint.

The design on the mirror illustrated in Fig. 7 is so sombre in tint as to partake almost of the nature of a monochrome picture. The bird is brown and white, the colouring about the breast being managed by a mixture of lemon-yellow, Vandyke brown, and white. The back is arranged so that it catches the light more than the breast, and here the feathers must be painted with rather more white and yellow, and less brown in the mixture. In the wings, again, the brown predominates; the tail feathers have an admixture of black. A rather smoother effect must be given to these long feathers than to the shorter ones of the other parts of the body. It is as well to spread the brush so as to imitate the general make of the feathers as far as

possible. This is one "knack" amongst many which cannot be learnt except by practice. A considerable amount of white should be used for the rings of feathers round the eyes, which are mainly brown, with a touch of white put in after all the rest is dry, to indicate the light reflected on the pupil. The beak is yellowish, the claws being a shade more yellow still. The branch is painted principally in shades of Vandyke brown, lightened with yellow and a little white. The leaves are put in with Antwerp blue, flake white, and middle chrome, and veined with Antwerp blue and burnt sienna.

For white or yellow flowers, the grey shadows may consist of ivory black, pale chrome-yellow, and flake white; for flowers of a rosy tint, chrome-yellow, crimson lake, permanent blue, and flake white. The same grey may be used also for the reflection of such flowers, which is no unimportant feature of mirror painting. It is impossible to give detailed recipes for making any particular tint required: the quantity of each colour to be used in a tone of grey to be painted over any particular kind of flower must be found out

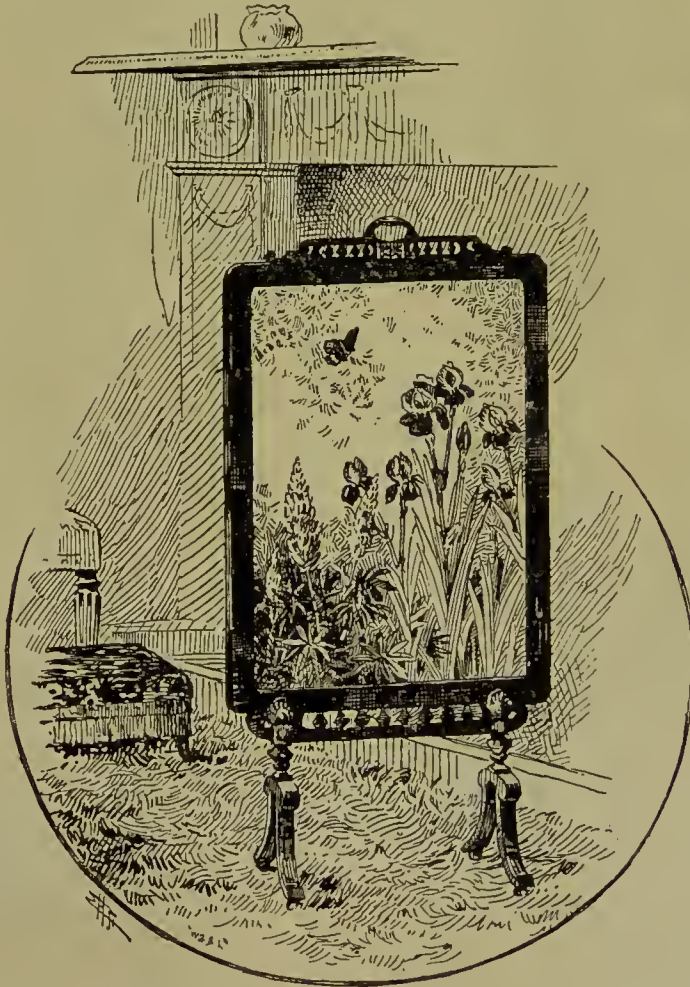


Fig. 6.—FIRE-SCREEN OF FANCY GLASS.

by the worker whilst she is mixing her paints. The outlines of the flowers should be followed with the grey before the details are filled in; but the rest of the flower may be painted before this has become dry, thus enabling the lines to be blended imperceptibly. It is a good plan to take a fine clean brush, and to draw it very gently down the meeting-point of the lights and shades. The brightest point of all may be put in with flake white, but not until the rest of the painting is dry, or it may run over those parts where it is not wanted, and so spoil the whole. Light green for leaves may be made of Antwerp blue, pale



Fig. 7.—MIRROR PAINTED WITH OIL-COLOURS.

chrome-yellow, and more or less flake white. This green may be shaded by a combination of Antwerp blue and burnt sienna. Permanent blue and pale chrome make a brighter green, which requires shading with Antwerp blue and raw sienna. Centres to flowers, stamens, and pistils may be put in with pale chrome—middle chrome and very little vermilion being used when a tint more nearly approaching to orange is needed. In painting the reflection, care must be taken, especially by a beginner, to get it all on one side of the design. She must remember that under ordinary circumstances the light falls from one side only, and she should have so painted her flowers that this is easily seen from the position of the lightest tints. The colours used for this part of the work will need less medium than the others. The shadows should be put in first, much as they were done in the first painting, but they should be rather darker in tone. This painting need not be too tenderly managed, for some irregularity in the touch is more effective than a very smooth and even stroke would be.

Beginners would do well to try their skill with some less costly article than a mirror, which is of little consequence should it chance to be a failure. For them there are many inexpensive photograph frames and screens, either in plain or frosted glass, which, with a little taste, can be very elegantly decorated. For these, rather small single flowers should be chosen, such as wood anemones, buttercups, wild geraniums, forget-me-nots, snowdrops, or primroses.

If the opening for the photograph is in the middle, an informal wreath can be arranged, the main portion of which is in the middle of the lower edge, the remainder tapering gradually upwards to the top. Another arrangement places the greater part of the ornament in the lower left-hand corner, from whence it strays up the left side and along the bottom. In painting such small flowers as those mentioned above, the brushes should make as few strokes as possible, each light being put on with one movement only. The leaves, too, should be begun at the tip, the small indentations being made as the brush is drawn down towards the stalk. When the colours are quite dry, they may be varnished by having a smooth coat of medium laid over them. For articles that are not likely to be subjected to much handling this is scarcely necessary, but the varnish will save photograph frames and such small things from injury. Gold and other metals may be used quite as successfully upon glass as upon china, and directions for its application having already been given, they need not be repeated here.

Painting on Wood.—The general method of painting any of the innumerable wooden articles now prepared for amateurs does not greatly differ from ordinary oil painting upon any other material. Those objects made of white or grey wood require a suitable design only to be painted upon them, no preparation being necessary; but the rougher and less well-finished objects have to be enamelled

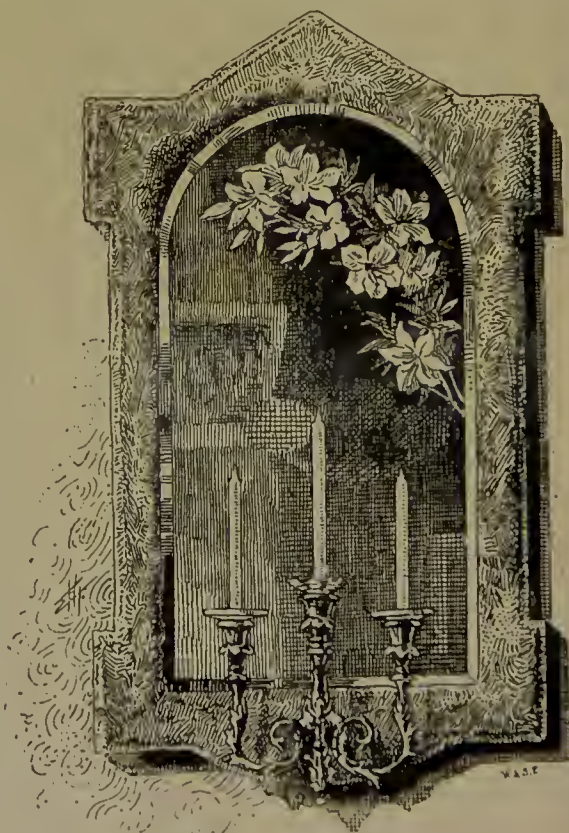


Fig. 8.—PAINTED MIRROR WITH FLORAL DESIGN.

before the more delicate colouring can be applied. Hog-hair brushes will be wanted, as well as three or four more delicate ones. No varnish is required, provided that the medium has been properly amalgamated with the colours. The enamelling is done in the usual way with a varnish brush, care being taken to avoid a streaky appearance, by applying a very small quantity at a time. It is far more satisfactory in the end to lay on two coats than to spoil the smoothness of the surface by putting on a great quantity at once. Each

coat must be allowed to get dry before the next is applied. There are workers who have a firm belief in the efficacy of scouring the enamel with glass-paper after each coat is dry; but with ordinary care, and provided that a tolerably smooth piece of wood is being operated on, this is not by any means necessary. The enamel will be found very agreeable to paint upon; indeed, to quote the advertisements, it has "a surface like porcelain." A mistake often made by amateurs is that of choosing the enamel so bright

in tint that it takes off from the more tender colouring of the ornamentation. They are too fond of using coral-pink, sealing-wax red, or duck's egg green, where a dull crimson, dark green, earth-brown, black, or cream would not spoil their more artistic colourings. It is always advisable to copy from Nature, if possible, especially as workers almost invariably choose flowers for the decoration of their tuck-away tables or music-racks. It is rarely that an artist chooses fruit, though, in point of fact, it is not more difficult to manage successfully than flowers. The main thing to be attended to is the arrangement of the lights and shades necessary to give the idea of roundness. The various tones and shades required must also be carefully blended, so that not a hard line is to be found

in the whole drawing. The bloom on plums and grapes must also be indicated. This requires painting on with plenty of medium, as it should be applied so thinly that the colour already applied to the fruit shows through. Flake white deadened with the merest speck of raw sienna and ivory black will form a very fair representation of the bloom upon purple fruits, that on others partaking more of the general colour itself.

The small wooden plaque, or tray, in Fig. 9, gives a good idea of the pretty effect presented by a painted landscape. Snow scenes are always favourite subjects, but require a degree of finish that is not always within the powers of an amateur. The houses in the foreground, being necessarily minute, need very delicate treatment, or they will have the appearance merely of flecks of whitish paint. The artist also must try to get the effect of the snowy landscape in the distance as well as she can, and must keep her colouring as clear and light as possible, avoiding any lumpy appear-

ance gained by loading on the paint in masses. For the gentian wreath which encircles it, however, the richest tints of blue (Prussian blue and a dash of cobalt) and deep glossy green (*terre verte*) may be utilised.

Such larger articles as corner eupboards, tables, three- or four-fold screens, blotting-books, and work-boxes, in which there is, as it were, a good-sized and unbroken slice of wood, look well if coated over with the new transparent staining, which, while colouring the wood any desired tint, allows the grain to be seen through, and thus forms an effective background for any style of design. The amateur who finds flowers and fruits rather difficult may ornament some of the smaller articles most effectively with conventional designs arranged to imitate inlaid wood.



Fig. 9.—OIL-PAINTING ON WOOD.

Work of this kind may be executed so daintily as to deceive the eye entirely, even under close inspection. The slight hair-lines of black, which mark the joining of differently-tinted woods, should be carefully put in with a fine pen after the rest of the painting is quite dry.

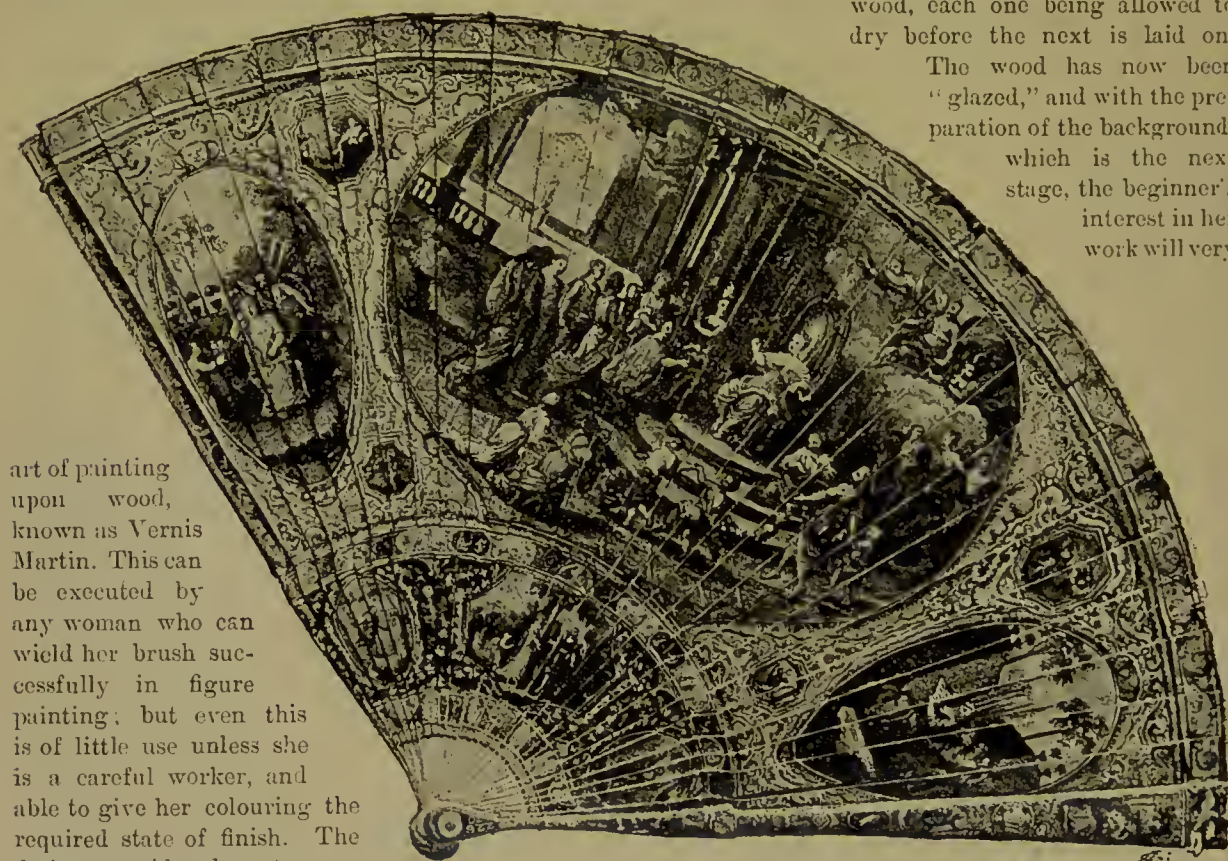
Vernis Martin.—The taste for the revival of the furniture of the seventeenth and eighteenth centuries has brought with it the fancy for the old

ready to be taken up once more. The wood must be well polished, smooth, and well seasoned. Almost any light and close-grained quality may be used, but sycamore or pear-tree wood is considered the most satisfactory.

A coat of gum-lac varnish is first applied quite evenly over the surface, and must be allowed to dry. This will take about four-and-twenty hours. The surface is then rubbed down with fine emery-paper, and two coats of opaque varnish spread over the wood, each one being allowed to

dry before the next is laid on.

The wood has now been "glazed," and with the preparation of the background, which is the next stage, the beginner's interest in her work will very



art of painting upon wood, known as Vernis Martin. This can be executed by any woman who can wield her brush successfully in figure painting; but even this is of little use unless she is a careful worker, and able to give her colouring the required state of finish. The designs considered most appropriate to furniture ornamented in this style are similar to those produced by Watteau and Boucher, in which delicate pale tints, graceful figures, and rural scenes play the greater part. Ordinary oil colours are required, essence of turpentine being used as a medium. The brushes should be sable, and more fine ones will be needed than coarse. The artist must not be disappointed to find that the work comprises several different processes, between each of which a considerable amount of waiting is necessary while the colours become set. When a little experience has been gained, the worker will be able to paint one or two articles while others, in various stages, are becoming hardened. In this way the delays will not appear so tedious, as by the time the last one is as far advanced as it can be, the first is

Fig. 10.—FAN PAINTED IN VERNIS MARTIN.

probably be aroused. Oil colours are used, and the general tint of the wood may be black, dull red, gold, green, or golden-brown. There is no reason why the wood should not be enamelled instead of painted; but, whatever be used, it must dry thoroughly, as usual, before the "aventurining" process is begun. This consists of bronzing the surface of the wood by sprinkling bronze or gold powder over a coat of mastic varnish, which is allowed to become only partially dry. Unless the atmosphere is more than usually damp, the varnish need only remain for twenty minutes or half an hour before the powder is peppered over it. The powder should be so sprinkled that every grain rests singly, and not in lumps, upon the surface. Should any of the grains become

clogged together, it is very difficult to separate them; blowing sharply on the wood may do it; or the merest touch with a fine camel's-hair brush. Gold-leaf should be used if the whole surface is required to resemble metal. In this case gold size should take the place of the mastic varnish. The metal should not be burnished, as the effect is more like that of the real old work when it is left slightly dull.

Now comes a long delay of five days, or a week, to allow the varnish to become perfectly hard. If the painting is commenced directly after the gilding, the gold will become scraped up irregularly, the smooth surface will be quite spoilt, and all efforts of the worker to improve matters will but make them worse. Hence it is better to leave the varnish for a long rather than a short time. The design must be lightly sketched upon the background, and painted with oils with the utmost delicacy. The transparent mirrorine medium before alluded to answers well for these colours, as it is necessary that no effect of heaviness should be given to the work. No hard outlines can be tolerated; the work must be delicately shaded, the flesh tints kept soft, so as to resemble old miniatures painted on ivory rather than anything bolder.

When the design is finished, it must be set aside for a fortnight or three weeks, in a place where no dust can settle upon it. This is done to harden the

colours before the application of at least four coats of varnish, each of which must be thoroughly dry before the next is laid. Many workers gently pour the varnish on at one corner of the wood, which they tilt in various directions, until it has spread evenly over the whole of it. In this way all chance of leaving brush-marks upon the surface, or of churning up the colours, is avoided, and the varnish cannot fail to be otherwise than smooth.

The fan given in Fig. 10 affords a very good idea of the class of design generally rendered in Vernis Martin. There are many fan-shaped fire-stove ornaments to be had which could be decorated in this style, and which would not be so difficult to paint upon, owing to the ribs being simulated and in one piece, instead of separate, as in a dress fan. A charming variety of small articles of furniture—caskets, fans, watch-cases, flower-pot stands, and letter-racks—can be had at Emerson's, in Regent Street; and now that lessons are to be obtained in London, the work is likely to become very popular. All necessary varnishes, materials, colours, and articles for ornamenting with this painting may also be had from M. Allain, 1 Rue de Rome, Paris, and he supplies a most attractive illustrated catalogue, from which would-be purchasers should have no difficulty in making a selection.

INDOOR PASTIMES.

WHEN summer is past and gone, when the autumn-painted leaves are fluttering groundwards over garden and lawn, and the shortening days and morning winds warn us that winter is ahead, then cricket bats have to be stowed away, and few indeed are the outdoor games that have much pleasure in them. By-and-by, when the snow comes, and the ice, things may alter. But a fire now in the parlour or drawing-room grate makes everything look cosy *indoors*; and the very shortening days themselves suggest to us the propriety of indoor recreations.

There are indoor pastimes suitable for all ages and both sexes, and we have only to pick and choose. We ought to study variety, however, so that when we do play we may be able to play heartily. On dull wet nights this may not be so easy. With the wind, perhaps, howling round our dwelling, and the rain beating hard against the window-panes, some of the more sensitive members of the family cannot help feeling a little low and depressed. They are thus disinclined to enter into any game, preferring, probably, to mope in a corner over a book. There is only one way of banishing

this weariness—namely, to enter into the fun of the “forenight” for the sake of pleasing others. It is surprising how quickly thereafter the person will find that he is pleasing himself.

To a considerable extent, however, the members of a family must be allowed to follow their own wishes and inclinations. This is, indeed, best. The tired merchant or clerk, for example, who has toiled, wearily and hot-headed, all day in his counting-house, may settle down happily and contentedly after dinner to his rubber of whist or pleasant game of draughts, and by so doing obtain the best kind of rest and recreation possible. The housewife, or materfamilias, sitting quietly down to light knitting—the worry and weariness of the day's duties past—is also resting and recreating herself; and so, too, are the merry children in the next room, engaged in the mystery of “Blind Man's Buff” or “Hunt the Ring.”

Cards.—For what we may call staid people, innocent games of cards help to pass away the long evenings in a very pleasant way indeed. We use the

adjective "innocent" advisedly, as we are with those who believe games can be played *for the enjoyment they give*, without any stake whatever. Especially is this the case as regards whist, at which both ladies and gentlemen can play. It is, perhaps, too much the custom to drink or sip wine and punch, while playing such games as whist. Such a custom is surely to be deprecated.

When playing cards, the greatest good-humour and unselfishness should be maintained. It is certainly trying at whist, if one's partner trumps one's card, or if anyone, through carelessness or trifling, makes a revoke; but even this should be borne patiently, though the offender may be heartily chaffed about it afterwards, or even roundly rated. In playing games such as Bezique even—and that is simple enough—one needs, for the time being, to be oblivious to all the world except his partner and the cards. A clear, cool head and good judgment are a *sine quâ non* if we would play well, while memory is needed above all things. Card-playing is, therefore, an excellent stimulus and training for memory.

The Scottish game of "Catch the Ten" and the Cornish one of "Ranter go Round" are excellent games. "Matrimony" is another.

Johnson's game of "Put" deserves a word or two; but let the great man speak for it himself:—"I play at 'Put,'" he writes to Boswell, "as I indulge in other amusements commonly pursued in society, rather than I may study the real tempers and dispositions of mankind than from any over-weening love of personal gain, or any violent desire to take advantage of the ignorance or weakness of my adversaries; for I hold it an indisputable truth that the characters of men and women are more fully discernible at the card-table than in the Senate, the fashionable assembly, or the privacies of domestic life."

For young folks fond of fun, the game of "Snip-snap-snorum" is to be recommended; and it is a game, too, that will exercise one's judgment and acuteness. Another amusing game is "Beggar my Neighbour," very suitable for a winter's evening. And there are quite a variety of others that we have no space to name.

Draughts and Chess are both very engrossing, but both unsuited to people who work much by day with their brains. On the other hand, for the manual labourer, the mechanic, or even the busy, bustling shopkeeper, these games possess all the qualifications of healthful rest. They have another peculiarity: in that they both require a *pair* of players, but do not accommodate more than one pair. Some exception ought, perhaps, to be made to this assertion, however, since real devotees of either

game will often spend hours contentedly in solving problems.

Puzzles.—There are, described in books on such subjects, quite a large number of mechanical puzzles, which, if learned by the elder members of a family, serve, with very little expenditure of thought, to amuse the younger, and especially their friends who may drop in of an evening. The act of explaining these puzzles is, like charity, twice blessed: it is health and happiness for the performer, and eke for the wondering young onlookers. Foolishly simple some of these puzzles seem—*after* we have seen them elucidated—yet they often embody some interesting law of mechanics, which is by their aid rooted in the youthful mind, and therefore not easily forgotten. Balancing a hand-card, for instance, on the top of a bottle, and several penny-pieces on top of this, then, with a flick from the middle finger off the thumb, sending the card right out without disturbing the pence, makes a youngster stare and wonder, and, after a bit, very likely *think*. A bridge of three knives, again, the ends of the handles resting on the edges of three tumblers, their blade-points overlapping, supporting quite a weight, illustrates a law in mechanics. The curly-haired lad yonder, who gazes in thoughtful astonishment at this puzzle, may live to build a bridge some day as big as that across the Forth. Balancing puzzles are equally wonderful and equally instructive, and the very interest they excite has a power for good over the healthfulness of the brain and nervous system.

Very clever, too, are many of the ingenious puzzles with counters, in which they are placed in rows and squares; and many card tricks are equally engrossing. Then there are a variety of ring puzzles, the solution of which at first seems inexplicable, and so, too, with the various manacle puzzles.

Clever and interesting though the above-named tricks may be, if during the course of an evening, some gentleman in the party proposes removing some other gentleman's waistcoat, or turning it inside out without the coat itself being taken off, the on-lookers will often stare incredulously; and yet it can be done, and quite simply, too, though it is no part of our duty in this chapter to say how.

Mental Exertion as Recreation.—There are quite a large number of so-called arithmetical puzzles, but the question concerning them is:—How far can they be considered in the light of indoor recreations? To answer this in a way to be understood, let us give an example of one of the easiest, and the first that occurs to us: viz., how to tell the number anyone thinks of. One boy says

to another: "Think of a number." The answer is: "I have thought of one." Then the orders are: "Multiply by 3," "add 1 to it," "multiply by 3 again, and add the number thought of. What does it now come to?" The boy tells this, and the thought reader has only to strike off the last figure to get the number thought of.

Thus, let the number thought of be	8
Multiplied by 3	= 24
1 added	= 25
Multiplied by 3 again	= 75
Add number thought of	= 83
Minus last figure	= 8

Now, for children to play at this who have been to school all day is not to *recreate*, even if it should *amuse*, because they are exercising the very portion of the brain which has been hard at it for some time during the day, and needs rest. On the other hand, a gardener's boy or a mechanic will find in such thinking games precisely the sort of amusement that is suited for him.

Puzzle stories are examples of the same nature; we might call them thought recreations. The well-known tale of the three gentlemen and thievish servants is one of these. They had all to cross a river in a boat which could only contain two at a time. It had been planned by the servants that they should murder and rob one or two of the gentlemen, provided two servants were left alone with one master, or three with two. The difficulty to be encountered was this: How could the six be conveyed across so that the boat might come back, and the number of servants at no time be large enough to overcome the masters on either side of the river? The story of the farmer coming from market with a goose and live fox and small basket of grain is another example of the puzzle story. When he comes to the river, he finds he cannot take all across at once. If he leaves the goose with the grain, the latter will be eaten; or the fox will eat the goose if left alone with it on either side.

These riddles are easily read. We do but mention them to remind the reader that such puzzles are good recreation for the boy who has not been at study all day, but certainly the reverse for him who has.

Movement Essential for School Children.

—Evening recreative pastime for children should be as merry as possible, and necessitate a good deal of *movement* among those who play. This fact in itself will necessitate such pastimes being played in apartments, where the noise inseparable from them will not disturb the elder and quieter members of the family. Even the nursery is hardly the place, more especially as nurseries are usually—but wrongfully—placed in upstairs rooms, and right over the living

rooms as often as not. Therefore we advise that in a country house a big room or loft—securely protected from the possibility of accident—be, if possible, given up to the juniors for their winter romps. There is no over-rating the good that may accrue from such a wise arrangement. The children are thereby free in body and unfettered in mind, because they feel they are disturbing no one. The place might be partially fitted up as a gymnasium, but on evenings devoted to recreation an elder should preside as umpire to conduct the sports. Like the evening pastimes of grown-up folks, these should be varied as much as possible night after night.

Happy are the youngsters of a family who own such a room, in which fun may wax fast and furious without a dissentient voice. Laughing is wholesome for any one, but especially so for children who have been in school all day. Laughing increases the appetite, increases the secretions of liver and pancreas, exercises the muscles, and tones the heart itself. It should be remembered, however, as far as children are concerned, that after hearty laughing there is always a reaction of a slightly despondent nature, so that when the merriment is all over, the young ones should have a light supper, and be packed off to bed before they get cross or peevish.

These may seem trivial matters, but they are really most important if we would have our children happy. We should choose, then, for our young people indoor games that combine the greatest amount of merriment with the greatest amount of movement. These should—as in the case of the schoolmaster and his pupils—first be learned by the elders, then taught to the children, who must be left to choose those that are best "suited for their requirements," as editors phrase it. A game may appear perfection to a grown-up person, yet, for some inexplicable reason, be universally tabooed by the little folks.

Without attempting to give rules or explanations—which can be found in books—we may just mention one or two likely games. Blind Man's Buff is an old favourite with, we might say, children of any age under sixty. Then there is Hunt the Slipper, Hunt the Key, and best of all, perhaps, Hunt the Whistle. Forfeits we name only to condemn, for obvious reasons. Blowing out the candle blindfold causes much merriment. The candle is placed in a distant part of the room, and all between it and the would-be performer should be clear. The Dwarf and Giant games are amusing. The Farmyard and the Menagerie deserve notice. Jack's Alive and the Jolly Miller, Shadow Buff, and the Stage Coach are all capital fun-giving, laughter-producing children's games.

Girls and boys in their teens may sometimes wish for a little quieter fun; and although we deprecate those that necessitate any large amount of study or

thought, still a good word may be said for such pastimes as the Spelling Bee, for example. This needs to be regularly organised beforehand; and if grown-up people can be induced to enter the list of competitors, so much the better, for it does cause a deal of amusement if, for example, Maggie May, aged fifteen, beats the learned doctor of fifty, or the clever solicitor, or even the grey-haired, good-natured clergyman himself.

Acting charades, proverbs, and rhymes will cause a deal of interest and quiet amusement; so do alphabetic games. *Tableaux vivants* are excellent parlour pastimes. They require a considerable deal of previous preparation, it is true, but this is all in their favour, for the rehearsals occupy time in a very pleasant way indeed. Children may often be interested and amused in the winter forenights, by shadow pictures of animals cast on the wall from the hands and fingers placed in certain positions. The performance is very simple, and is well worth learning.

Round the Fire.—What more pleasant in the long forenights of winter than for young and old to gather round the parlour fire, in a wide and pleasant semi-circle, the old folks perhaps in the corners, the little ones on hassocks inside the charmed ring, or asquat on the rug in company with the honest dog or "harmless necessary cat." There are evenings when such a gathering seems to suggest itself. The younger members of the family are tired perhaps with their romps, independently of the fact that it is getting near bedtime; the elders are weary of parlour pastimes, and even of music. There is music out of doors, however—the music of the wild wind and the swaying trees; while the withered creepers keep tapping on the glass in every lull of the conversation. Such conversation may be judiciously led by the head of the house without, be it noted, his seeming to lead it. This will be all the more easily done if a few strangers are of the circle. An anecdote or two told, for example, about the homing instinct of cats, will lead to many such stories, and then to tales of bird and dog-life, and before the evening is over—suggested, perhaps, by some mysterious knock heard in the hall or upstairs—the conversation may end in a few old-wives' ghost stories. Of course, not a soul in the circle believes in apparitions, but the tales about them are very thrilling, nevertheless.

A song or two sung by the fireside without the accompaniment of piano—though chords from a violin, elicited with the fingers *minus* the bow, are very effective—help to pass the time pleasantly. There is a sort of song which is eminently suited for the fireside, but which unfortunately is going out of fashion,

except away on the Borderland, or in the Highlands of Scotland. We mean the ballad—the song which is also a story, and the music thereof often a mere dreamy chant. Why could it not be revived in England?

Story-telling is probably a gift, but really it is like ventriloquism—a gift that many possess without being aware of it. There is no harm in trying to tell a story. Fairy stories told to a child on one's knee, are often so interesting that even the elders pause to listen. They must be *impromptu*, though often a child will order one of a previous evening to be repeated, and this makes it all the more easy for the composer.

We hardly advise word-puzzles to be adopted in the circle round the fire. They necessitate books and papers, pencils, &c., while real fun must be conducted with empty hands and open hearts. But cryptogram exercises, anagrams, and all the other "grams," charades, acrostics, guessing stories, &c., are excellent amusement round the great parlour table.

Another suggestion for a pastime is found in guessing and deciphering the puzzles, &c., given in the periodicals which form part of the weekly family reading. It is a good plan to send them up to the editor, and perhaps a book or money prize may be the guerdon.

Several papers have now adopted an excellent plan for bringing young people into unison with Nature. They have formed little societies, such as "The Sunbeam Club" (*People's Journal*, Dundee), which was, we believe, the first to start these. The youthful members have prizes offered weekly for anecdotes of animals or flowers, and they must all declare that they will through life protect the interests of all God's lower animals. The *Newcastle Chronicle* has a society of the same or a similar sort, and so have many other weeklies.

Scientific Amusements.—Many of these are eminently suitable for the family circle in the winter forenights. The easiest should be tried first; but they will usually depend upon certain members of the family following up the particular subject as a hobby or favourite pursuit, and such hobbies are too large to be entered into here, but will be treated of in a separate article.

Reading Aloud.—This is a pastime which for many reasons should be adopted in the family circle. It is good for all to hear a nice story read, if well read. There should be no effort after dramatic effect, but the reader should take time to speak, and pronounce every consonant and vowel correctly.

In reading a story the members of the family

should take turn and turn. To read aloud for an hour is long enough, and indeed half-an-hour would be found tiring to some young people, if not in good form. But reading thus tends greatly to increase the capacity of the lungs, and it also has a good effect on the larynx, or organ of voice.

Recitations are excellent practice, but before attempting to recite, even in one's own family, one should have studied the subject to some little purpose, and practised the piece over and over again before a looking-glass in the privacy of a room. Good-natured criticism from other members should invariably be taken in a kindly spirit. The younger members—little brothers and sisters—may not be very flattering sometimes in their remarks, but even their criticism is often radically incisive. Children are very quick to detect the ridiculous, and their remarks anent what does not please them are seldom made *sotto voce*. When reciting, we should never forget the words of the poet Burns :—

“O’wad some power the giftie gie us
To see oursel as ithers see us.
It woud frae monie a blunder free us,
And foolish notion.”

There are several excellent books of recitations published, and one of these ought to be in every family. The exercise of reciting is excellent for chest and voice, as well as for the mind. Those who are somewhat lame at the art in commencing, should take heart of grace, by remembering that no one is a born actor. Actors are not like poets; on the contrary, they are made, and genuine criticism aids the manufacture.

Music and Musical Instruments.—Music may be said to be the especial pastime of the winter's or even summer's evenings. We hardly think it too much to say that there ought to be, not only one musician in a family consisting of many members, but several. It may be advanced, in contradiction to this statement, that the musician, like the poet or author, is born, not made (*nascitur, non fit*). This we grant; and although we should not expect in a family circle to find great tenors, or magical pianists or violinists, still we maintain that almost any one can learn to play an instrument so as to give pleasure in solos or in concerts, who makes a study of it. We would, however, make one remark: it is very much better in a family for different members to learn *different* instruments, that they may have the great pleasure of playing in concert.

We think a child who has any ear at all can hardly begin too young. He or she will not be able at six to stretch an octave on the piano, or to grasp and hold an ordinary violin; but as far as the latter instrument is concerned, one can be had

suitable for a child, and it may be very far from a toy. Expensive lessons will hardly be required at this early age; at the same time, the tutor must be a *player*, else the child will learn mannerisms which it will be very difficult indeed to get rid of. Even a slovenly way of holding the bow becomes a very ugly habit indeed. Slowly, very slowly, a child must be taught this prince of instruments; if only on one or two strings—the others being taken off—it will be all the better. What we want is to teach the boy or girl to bring out true clear notes, and to educate the ear gradually. So there should be no force work. An hour a day at first will be long enough for practice; then the instrument should be taken away and locked up, or the child will use it to the detriment of his ear. It is not our intention at all to give a lecture on violin tuition, but the above little hints are from experience.

The piano is far more easily learnt: the notes are made for one, and one has to make the best of them, guided by correct ear and touch. Some of the elder members of the family will, no doubt, be able to perform on this instrument sufficiently well to lead in little fireside concerts, until by-and-by the juvenile violinist is able to fill his proper sphere, and become leader. The piano and violin go very well together. The players must play with caution, however—play from music, abjuring grace notes of their own, keeping time most carefully, and playing, moreover, so that both instruments can be well heard. If the violin drowns a false note on the piano, or *vice-versâ*, things are going all wrong, and reformation must be attempted at once.

It is better to play over and over again the tunes or pieces that can be easily done, than hurry on to those more difficult of execution. We say, without fear of contradiction, that no player who lacks the gift of *patience*, will ever make a good musician. Hurry spoils everything.

The sweet sad guitar may often be substituted for the piano. With the violin it sounds most charmingly. The violin is wedded to the guitar. Most guitars are somewhat too wide in grasp for little hands, so that a medium-sized instrument should first be used.

An older child may learn the 'cello—it is such a very sweetly-toned instrument. Then, we have the clarinet, another delightful instrument, and one that goes well with the piano, guitar, or harp. A piano is an expensive investment if it be a good one, though less so than formerly, as a really grand-toned overstrung instrument can now be obtained for about £37 10s. But it is not a necessity in a musical family. For instance, let us say there are seven members: surely we can count upon them for four instrumentalists. Let it be a guitar of full tone, a 'cello and violin, and a clarinet or flute, and there

may be one quite little child to touch the triangle, and another to tap the tambourine. Away up in the nursery should be the place for practice, and let them not play in the drawing-room till they can really do something.

Young beginners should beware of pride. Pride is one of the greatest stumbling-blocks in the way to advancement. Be not unwilling to play if asked; do your best; but do *not* fancy you have done anything, however loud the well-meaning—or *nil*-meaning—applause that comes in at the close of your performance. Nothing does a band of young performers more good than listening to really good players. The solo player, too, should never miss an opportunity of hearing stars perform. The young boy violinist, if residing in a town of any size, should certainly join a class. Books of instruction are good for home practice, but lessons from a tutor must go hand-in-hand.

A family that is fond of music should not confine its playing to the home. Each member, no matter what the favourite instrument may be, will generally manage to make acquaintance with some one who can also play. Many a pleasant and instructive evening could then be arranged, and in all probability the benefit would be mutual.

The harp is a charming family instrument, though somewhat difficult to learn. It should be remembered that the harp and violin constitute in themselves a drawing-room band. The harp, however, requires a very excellent ear for harmony, so that it is scarcely an instrument for the juvenile members of a household.

The cornet is somewhat noisy for the drawing-room, but this should not prevent any one from learning the instrument if his tastes run that way. And when he can *really* play, how delightful are the tones of the cornet on a summer's evening in a still glen, or stealing over the water of some blue and sunlit lake! The occasional attendance at really good concerts tends greatly to increase one's love for genuine music, while at the same time a most enjoyable evening is spent. In nearly all large towns good music can be heard at any time, and the recreation obtained is often better, because less exciting, than that of the theatre itself.

One word in addition about the zither. It is claimed for it that it is not only one of the most perfect and sweetest of instruments, but one which people who have neglected music in their early years may, with about an hour's study daily, attain a fair mastery of in the course of a year. Hear how beautifully the late Anthony Trollope speaks of the zither:—"Reader, did you ever hear the zither? It combines all the softest notes of the human voice. It sings to you of love, and then wails to you of disappointed love, till it fills you with a melancholy

from which you never wish to escape. It speaks to you as no other instrument ever speaks, and reveals to you with wonderful eloquence the sadness in which it delights. It produces a luxury of anguish, a fulness of the satisfaction of imaginary woe, a realisation of the mysterious delights of romance, which no words can ever thoroughly supply. While the notes are living, while the music is still in the air, the ear comes to covet greedily every atom of tone which the instrument will produce, so that the slightest extraneous sound becomes an offence. The notes sink and sink so low, and low, that the listener dreads that something will be lost in the struggle of listening. There seems to come some lethargy on his sense of hearing, which he fears will shut out from his brain the last, lowest, sweetest strain, the very pearl of music, for which he has been watching with all the intensity of prolonged desire. And then the zither is silent; and there remains a fond memory, together with a deep regret."

But oh! if amongst a family there be sufficient ability and training to make up a string quartet, what a world of enjoyment is there! Says a recent writer in *Cassell's Magazine* for July, 1889:—"In a sanctuary of art where perfection of execution, loveliness of detail, and highest mental participation become the aspiration, much that goes to make up outside-world music is not. Noisy and coarse elements are forbidden; each performer is a soloist. Especial care is taken with each part, that the skill of the player, the characteristic quality of the instrument, and the spirit of the composer are at one and the same time brought out to perfection—a zenith in genuine art familiar enough to frequenters of the Monday Popular Concerts, that extraordinary series of performances which for years have been devoted wholly to the cause of chamber music. Hence stringed instruments hold sway, as from the outset, when that household possession a 'chest of viols' embraced a set of six fiddles, large and small. The almost illimitable range of tone possible, from the bass-viol to the far-reaching-violin, eclipsed the madrigal's scope, and it is scarcely surprising that composers made eagerly for a sphere so admirably suited for the expression of their choicest thoughts. The 'strings,' so alike in family, are yet distinct in individual quality. The expression each is capable of is wonderful, as all who have heard a Joachim and a Piatti can testify. Their smooth, even quality of tone together or separately, their properties of blending in sweetest contrast, their effectiveness whether in vigorous or gentlest mood, their intensity of intonation when finely manipulated—these and more qualities single out the quartet of strings as the instrumental combination *par excellence*."

"Give the true chamber musician the quartet for perfect enjoyment. The great masters have expressed their greatest thoughts in this form; and famous artists who perform quartets declare Haydn to be their idol. His quartets are so finely drawn, so exquisitely balanced, so nicely distributed for the instruments, as to win fresh admiration at every hearing from those who know them best. The genial souls who spend hours amid the refreshing atmosphere of the music chamber, they know the ravishing and chromatic Spohr, the irrepressible Boccherini, the passionate Mendelssohn, Beethoven the sublime, the lovable Mozart—but give them Haydn. He affords a perfect sense of satisfaction and completeness."

Singing is so extremely wholesome an indoor pastime that it should be tried by all; while if there be any one member in a family with a really good voice, he or she ought to have lessons. Singing gives great delight to an audience in a drawing-room: *i.e.*, if it really is singing. A voice suited for a large hall, however, should be very much modified in tone for the parlour or fireside. Here we want melody; we want rather a sweet low voice; we want to hear the girl sing as if she felt not only the power of the sweet music, but the power of the poet's words as well. And these words ought to be sung distinctly as regards pronunciation. Alas! for all the benefit the words are to us at most evening parties, the singer had as well be singing in Chinese or Sanscrit.

Dancing.—For young people an occasional dance is quite the reverse of harmful, from whatever point of view we regard it. Late hours, however, and over-fatigue and excitement ought, if possible, to be avoided. For young children it is a pity, in our opinion, that some of the very old-fashioned dances do not come into vogue again: we refer to those our fathers so excelled in, and called country-dances. There is so much movement in them, such glee and fun, and such excellent exercise. In Scotland these dances are still kept up, while nothing can exceed the genuine jollity of the Highland reels and strathspeys, which Her Majesty, at her Balmoral home, does so much to encourage.

Societies for Entertaining.—We cannot conclude this chapter without drawing attention to a society—the Kyrle—that ever since its establishment has done so much good. It will be sufficient herein to state what are the principal objects of the society, and to say that under royal and noble patronage, *plus* the countenance of the aristocracies of literature, art, and music, these objects are well and faithfully

carried out. We take the following from a recent circular:—

OBJECTS OF THE KYRLE SOCIETY.

I.—DECORATIVE BRANCH.

To decorate by mural paintings, pictures, stencil works, mottoes, and other means, workmen's clubs, hospital wards, parish rooms, or any room used for social gatherings, without distinction of creed.

II.—OPEN SPACES BRANCH.

To secure and assist in securing any open spaces in or near the metropolis, and to prevent spaces being illegally built upon. To co-operate with local societies for the preservation of commons, footpaths, village greens, and roadside strips. To render available as public gardens disused burial grounds and other waste spaces, and to provide seats, plants, &c., for them.

To distribute cut flowers, plants, ferns, and bulbs to hospitals, workhouses, and other institutions, and amongst the homes of the poor.

III.—MUSICAL BRANCH.

To organise a voluntary choir of singers to perform oratorios for the poor. These are frequently given in churches, halls, and schoolrooms situated in poor neighbourhoods and districts of London (where good music could hardly otherwise be heard).

To give miscellaneous concerts in halls, schoolrooms, and other places, with a view to provide recreation and amusement in poor districts; and in connection with this branch of the Society the Countess of Meath provides entertainments in workhouses and hospitals during the winter months.

IV.—LITERATURE DISTRIBUTION BRANCH.

To distribute as loans or gifts to hospitals, infirmaries, workhouses, clubs, and libraries, for the benefit of the poor, books, magazines, and periodicals.

This excellent society has now provincial branches in Birmingham, Cheltenham, Dublin, Leicester, Liverpool, Nottingham, Edinburgh, and Glasgow; and we doubt not these will at an early date be extended to many other towns and cities of the British kingdom.

It was not, however, the first in the field, nor is it the only one now. All over the kingdom "People's Entertainment Societies," under this and other names, have been established for the purpose of placing the musical or other recreative gifts of the middle and upper classes at the service of their poorer neighbours. These societies have in many localities lifted up the old and rather unsatisfactory "Penny Readings" of years ago, into a higher plane; and in sharing the work of such movements many people successfully combine a large amount of good to others, with recreation for themselves. One may be able to give a good popular lecture, with or without some experiments. Another who owns a good oxy-hydrogen lantern, may help in that way. Others may assist according to their ability in a variety of entertainment—some giving recitations or dramatic readings, others songs of varied character, others instrumental performances. Actual expenses are usually small, and such use of personal acquirements is to turn what was perhaps taken up as mere indoor pastime, to the best account.

GARDENING FOR AUGUST.

Hardy Border Plants.—Some of these which have been raised from seed earlier in the year, will now be fit for planting where they are to remain for flowering the following season. We more particularly refer to such as Sweet-Williams, Canterbury Bells, Antirrhinums, Foxgloves, and the like. Some may possibly have been sown where they were intended to remain; these, no doubt, will be much too thickly placed, especially if the seed germinated freely. In any fresh planting it is well to bear in mind the condition under which each will best thrive. Foxgloves do well in a moist spot with little shade, and are of course rather tall when in flower. Antirrhinums prefer a rather dry position, and will grow in poor gravelly soil where many things will starve; they enjoy plenty of sunshine. Canterbury Bells succeed in soil moderately good, and neither too dry nor too moist; if partially shaded, it does not materially matter. Sweet-Williams do best in good soil, tolerably moist, and with plenty of exposure to the sunshine.

Primroses and Polyanthi raised from seed and previously alluded to, should not be planted where they are to flower yet, but kept more closely together, so that better attention can be given to their needs as to watering, &c.; these, and such as Forget-me-nots and Violas or Pansies, had all better be left to fill the flower-beds later on. After any transplanting has been done, one or two good waterings must be given, and frequent sprinklings afterwards for a week or two, until it is seen that the plants are becoming established. This attention as to watering is absolutely essential to success in dry weather with all newly-planted subjects. Every advantage, however, should be taken of the favourable condition of the weather for performing the work; after a shower of rain, for instance, the atmosphere is far more congenial, and the soil in a far better condition to receive young plants. Root-action is also set up more speedily at such times, the chief thing to be guarded against being any injury from the depredations of slugs, which are more voracious when the growth is young and tender. In any case, where hardy plants are getting to be overcrowded, some thinning out will be advisable; if they have flowered, this may be done at once. It will tend to strengthen the plants for another season, and also aid them in passing through a more than usually severe winter without injury. Weakly growth and dead or dying shoots should always be removed as soon as possible, if only for appearance's sake.

Every attention that may be observed needful in

further securing any tall-growing plants against injury during severe winds or storms, should be seen to at once. A few ties made in time will often save many a plant or branch from either being partially spoiled or broken off. Dahlias are an instance of this, now that they are commencing to flower; they will need as much attention as anything in this respect, and the work amply repays for being done in good time. If any earwigs are found to be eating the opening flowers, a trap must be set for them, the best and most simple thing for this purpose being a small flower-pot inverted upon the top of the stake that supports the plant, with a little hay or moss thrust into the bottom of the pot. During the daytime these pots can be examined and the insects destroyed; this is better than searching for the marauders after dark with a light.

The Gladioli will now be pushing up their flower-spikes. When they are about two feet in height, each one should have a stick to support it. This stick should be about a foot longer than is at present needed, for the future growth of the spike to be secured to, as it grows in length. Thus sticks that are about four feet in length, but slender, are well suited for the purpose, nothing being better than the bamboo canes of small size. In making the ties, be sure to allow sufficient room for growth: a tight tie will cripple the young spike, and possibly break it off eventually in its efforts to ascend.

The Irises that have now gone out of flower may, if needful to increase the stock, be divided at the root: this more particularly refers to German Irises, than which there are none better adapted for all-round cultivation in our English gardens. If left undisturbed for a few years, the clumps of these get to be of extra large size; they make excellent marginal plants to shrubs in shady and moist situations, or they can be planted between newly-introduced shrubs that are as yet of small size. All that is needful in their removal is to secure a fairly good amount of roots, and soil attached thereto. If any of the Irises are disposed to ripen seed-pods, it is better not to allow such to remain, or the plants will be weakened for another season's flowering. Sweet Peas will have their flowering season greatly prolonged if all of the pods are picked off as soon as they commence to swell: fresh seed for another year can be purchased cheaply enough.

Where early flowering Stocks are appreciated, some seed of the "intermediate" varieties should be sown the first week in August. Plants thus raised will withstand the weather of our ordinary English winters, if precaution is taken to select a spot for them which is fairly dry and protected.

They should, when large enough to be transplanted, be pricked off a few inches apart, and left thus until the spring, when they can be planted out where they are intended to flower. The best to grow are the Scarlet, Purple, and White varieties of the "East Lothian" kind.

Plants of Pansies, such as are to be seen in the shops of the florists in immense numbers during the early spring months, may be grown from cuttings struck towards the end of August. By that time the chief part of the plants will have ceased to flower in most instances, and young shoots should be appearing from the crown of the plant. These growths will make excellent cuttings if taken off when about three or four inches long, and as close to the old stem as possible. They strike best if partially shaded, and prefer a moist cool position. If there is room in a cool pit or frame, so much the better; or one or two of the hand-lights, as previously alluded to, may be advantageously used. The soil should be composed of nearly half road-serapings or sand, and the rest of loam, with a little leaf soil, if it is not of good quality. This should be passed through a coarse sieve and well mixed together, and then spread over the surface to be occupied with the cuttings to a depth of about three inches. The cuttings should be inserted as soon as possible after they are cut from the plant, and about half of the length of each cutting covered with soil and pressed down firmly. Should any mildew be observed in the course of a few days, by reason of the extra moisture, a slight dusting of sulphur will soon remedy it. Any flowers that are disposed to open should be picked off, otherwise the young plants will be weakened considerably and the growth retarded.

Flower-beds.—The chief points now to observe are a due regard to cleanliness, and a liberal supply of water should the weather be dry. With respect to the former, it is well to take note of the fact that if old flower trusses and decaying leaves are allowed to remain, the beauty of the later flowers is greatly detracted from by these drawbacks. We have often noted that a flower-bed which may have been looking exceedingly gay for some weeks, will eventually present a somewhat seedy appearance. In such instances it is well to give each one a good picking all over, to remove all old and faded flowers, also foliage where needful. This will considerably refreshen the plants, and result in an improvement in their appearance after a few days. After such work has been done, the soil between the plants should be stirred upon the surface, and all weeds

that are making an appearance removed as a matter of course.

In the case of plants of scandent growth, such as Verbenas, some more pegs may be necessary to regulate the shoots; otherwise they are disposed at times to get too thick in places, and thus weaken each other. Each kind of plant, where several are planted in one bed, should be kept within proper bounds, and not allowed to enroach upon its neighbour. In the case of uniform lines of distinct colours, this advice needs more particularly to be carried out. The heights of each kind when thus arranged must be regulated to suit the case; some things will bear rather severe cutting or pinching back if needful; such, for instance, as the Golden Feather, which should never be allowed to produce any of its flowers, otherwise the foliage will gradually lose its brilliancy, through being partially shaded, and the cessation of young foliage growth for the time being.

When the mowing is in each case completed of the grass between flower-beds, the edging of the latter should be proceeded with at once. Well-defined outlines are thus given with enhanced effect, and considerable improvement as to good keeping. Any beds that show symptoms of being extra dry should have additional supplies of water after the soil has been stirred; in such cases it is best to pour the water between the plants rather than upon them, afterwards giving a sprinkling overhead. This should be repeated two or three days in succession, until the soil becomes well moistened, and is better done during the afternoon than the morning. In bad cases of drought the best way is to reduce the exhaustive process going on in the plants by removing nearly all of the flowers, relying mainly on those that are coming on, rather than distress the plants more than is necessary for the next week or two, until they are partially recovered.

Shrubs.—Amongst these there will not be much attention needed at present; watering will still have to be seen to, in order to preserve them in health and vigour. This work always pays, and frequently saves the lives of plants, with a consequent replacement by extra purchases. A few shoots may still require shortening, to keep the plants within bounds, especially young vigorous-growing kinds; and where any are found to be getting too thick, some thinning out will be better than a general pruning of the plants themselves. Climbing shrubs should in particular be treated in this manner; for if too severely operated upon now, a young growth may result therefrom that will be prejudicial to them when winter sets in. No

shoots at all should now be removed from Virginian Creepers, or any other plant that will in the course of a few weeks supply a good quantity of material for decorative uses in a cut state, such as harvest decorations, where extra lengths are often valuable.

Roses.—Where budding was performed last month in good time, some examination of each bud will be necessary during this month; the chief point to observe is whether any slackening of the ties, made at the time of insertion, is necessary. If they are observed to be too tight around the buds, this had better be done, allowing sufficient room for expansion of growth. If any of the buds show signs of starting into active growth at once, instead of laying dormant until the following spring, they must be given some encouragement by shortening the shoot of the stock to within about six inches of the bud itself. When the young shoot attains to the same length, a slight stick should be tied to the main stem of the stock in the case of standard plants, but thrust into the ground if they are dwarfs, and the shoot tied lightly, but securely, to it. This is done to guard against its being blown out of its socket, which easily happens when the young shoot first commences to grow. The same precaution must be taken the following spring, if the buds remain dormant until that time—which is generally preferred, but not always secured. If any bud has not taken to the stock, and is observed to be dead, or nearly so, another bud may be put in on the side of it, or on a spare shoot, should any such have been left.

Roses that have for a time ceased to flower should have the seed-pods picked off, to prevent them from growing and developing into mature seeds. Any shoots that are disposed to make extra robust growth should be stopped before those not so strong are weakened, unless the plants are trained as climbers, when such shoots can be conveniently managed as soon as they are long enough to be brought down in a horizontal manner. Roses, after flowering, should be encouraged, by watering and syringing, to make a secondary growth, which will flower, though not so profusely, in the autumn. Keep close watch against any suckers issuing forth from the stocks; the difference between the stock and scion in most cases is readily discerned, in some few it is not. Those should be cut off close home in every case, as soon as seen, on standards; and either pulled off, or cut back as far as possible under the soil, in the case of dwarfs. This will prevent the plants being weakened, for these suckers are invariably disposed to make stronger growths than those parts that one would rather see gaining in vigour.

The Carnation.—The Carnations (and *Picotees*) have been great favourites in the garden for many years past, and most deservedly so, both for the beauty and fragrance of the flowers, and for their hardy character and adaptability to almost any kind of soil. In order to succeed in the best way possible, they should be propagated annually, immediately after they have ceased to flower. This is frequently overlooked or not deemed necessary; it does not do to be carried away with the luxuriant growth that they may happen to make, thinking thus that a far greater return in flowers will be had the following year. This may occur in a few cases, but in by far the greatest number it will be the reverse; for after a very sharp frost, old plants frequently die off. Thus a plant which at this period of the year may look most promising, will present but a poor appearance the following season. Another point to be taken into consideration is the additional amount of ground which is occupied in their cultivation when allowed thus to remain undisturbed. Such spots, too, are often found to be a refuge for slugs and the shell snails in the winter and spring. Thus, when fresh growth is made, they prey upon the same, and cause almost endless trouble and annoyance.

These few remarks are made in favour of annual propagation, and will, we trust, show the necessity there is of giving attention to it. As soon as the flower-spikes are exhausted, they should be all cut off close to the ground, and preparation made for increasing the stock by layering, which is by far the best, as well as the easiest, mode of cultivation. Some good loamy soil and road-scrappings or sand should be obtained and mixed together: two-thirds of the former to one of either of the latter. The soil should be passed through a moderately fine sieve, say of half-inch mesh; this process assists the layers in rooting more freely into it, which is a considerable gain when removed later on in the autumn or the following spring. Some pegs will also be needed for securing the growths firmly upon the soil: these should be about four inches long. Having made these preparations, the work may be proceeded with, taking care to have a sharp knife for forming the layers in a proper manner. This is done by taking the shoot in the left hand, pressing against the wood below the leaves with the fore-finger whilst the incision is made. The cut should be made about an inch and a half long, and in a sloping manner upwards until about half of the wood is cut through, thus forming a tongue for inserting into the soil, from which the young roots will after a little while issue forth, forming quite a tuft when taken up. Before doing this, however, the soil should have been spread under the layers, and all the weakly wood cut away, in order to direct all the resources of the plant to

supporting those shoots which are intended for propagation. Those plants that are the most vigorous of each respective kind should be most relied upon to keep up the stock; unhealthy plants ought always to be passed over, unless in cases of necessity. As soon as a few plants have been operated upon, a good watering, with a rose attached to the water-pot, should be given, and repeated every day afterwards, when the soil appears to be at all dry, for the following month. By that time root-action will have commenced in an active manner, with less need of watering; but it must not be altogether discontinued if it should happen to be dry weather.

By the end of September the roots will exist in sufficient quantity to maintain each young plant independent of the parent stem; the shoot behind the incision may therefore be cut through entirely. The condition of the plants may be exactly ascertained previous to this being done by examining one or two, in order to be on the safe side. They should afterwards be left for a fortnight or three weeks longer before being taken up for either re-planting in prepared ground, or for potting in small pots to be kept in a cold frame throughout the winter, and transferred to the borders in the spring. We recommend the latter plan if there is room and convenience for adopting it, as it is safer should a prolonged winter of more than usual severity ensue. It is not always convenient either to provide room for re-planting just when needful; in such a case the young plants may remain where they are till the spring, if desirable, without any harm, and then lifted and re-planted, afterwards giving a little more attention to them until again established.

Raising plants from seed is a most interesting mode of getting a stock, but not more than one-third of the plants so raised must be expected to produce flowers of good quality. This will, however, be compensated for in the greater vigour of the plants in most instances, seedling plants being, generally speaking, of stronger growth. This vigorous growth is maintained for two or three years; if therefore a few only of seedlings, of good quality, are added every year, it will be possible to keep up a healthy stock of plants. Seed should be sown early in the spring, so that good plants may be had before the winter sets in: these will then flower well the next season. There are some kinds that are well known for their good qualities: these should, in addition to the seedlings, have a place, even in limited collections. If only a few are grown, we would advise the latter to have the preference, so as to make the most of the room at disposal. Of these, the Clove Carnations are constitutionally the best adapted for cultivation in the average run of gardens. The following are twelve excellent sorts in varied colours: viz.—True

Old Crimson, rich maroon; Bride, pure white, smooth petals; Cremorne, light purple; Florence, bright buff, large and fine; Germania, a fine yellow kind; Mary Morris, rosy-pink; Mrs. Reynolds Hole, terra-cotta colour, robust habit; Ne Plus Ultra, white, fringed; Purple Emperor, a bright purple; Rosa Celestial, rose colour, free bloomer; Rosa Bonheur, pale pink; Scarlet Gem, brilliant scarlet. Of Picotees we recommend the following half-dozen for general cultivation: viz.—Annie Douglas, flowers large and well formed; Agnes Chambers, robust habit, extra fine; Terra-cotta, large full flowers; Prince of Orange, very free flowering; Flavius, flowers of fine shape; Princess Beatrice, distinct and good. These kinds can be obtained from the trade growers, many of whom make quite a speciality of their culture.

Propagation of Geraniums.—This work, if done during August, is rendered much more certain and reliable in those cases where there is but a limited accommodation for storing the young plants all the winter months. We do not advise, by any means, that cuttings should be taken indiscriminately from the plants whilst they are still in full beauty in the flower-beds, and thus partially spoil the appearance for the rest of the season. It can be done, however, by thinning out the shoots where they are extra thick (or where the plants are found to be encroaching upon other things), and that, too, with manifest advantage. In this manner a few shoots now and then may be removed, which would hardly ever be missed; supposing only two or three shoots altogether were cut from each plant, it would not be any difficulty, under ordinary conditions, to maintain the requisite amount of plants for another season, with a margin for either an increase or to meet contingencies.

The propagation of Geraniums at this season of the year can be performed with but little attention or care. Unlike many other things, these will strike root best if the cuttings are exposed to the full influence of the sunshine. They may be inserted in the open ground, where a warm sunny spot can be had, all the additional preparation to the soil usually obtainable on the borders being some sand, to facilitate root-action more expeditiously. If shallow boxes are available, the cuttings can be struck in them, preparing them the same as in the case of pots with proper drainage. No more labour will then be incurred later in the autumn in potting up the young plants, which would be necessary if they were struck in the open border. The percentage of plants struck would be in favour of the latter plan in most instances, but the saving of labour in the other case. Should the cuttings be what are usually termed

"sappy," or of extra luxuriance, they may be allowed to remain for a day or so, after being cut off the plant, before they are inserted in the soil. When this is done, they should be spread out thinly, so that they become somewhat dried up; this takes off the superabundant sap, and aids in preventing the cuttings from rotting off at the base.

There are different ways of trimming cuttings previous to insertion. Some leave on nearly all the leaves, whilst others cut off all the fully-grown ones. We prefer the latter practice, for later on the older leaves will decay and have to be removed, and probably not without disturbing the young plant just after it has roots of its own. In every case it is a good plan to remove all the little green bracts that are attached to the stem at the base of every leaf-stalk. The cuttings should be pressed into the soil, and one good watering given, after which but little will be needed until the cuttings are struck; this will be easily discerned by the lighter colour and fresher appearance of the young leaves. Then a little more water will be required, but never in a great amount until the spring season. Do not in any case of propagation attempt to shade Geraniums at this season of the year; it may do for several other plants, but not for these, even to the slightest extent.

Drying of Flowers and Grasses for Winter Decoration.—This is an important piece of work towards the end of the month, for it will be more satisfactory if done during August than if left till later in the season, when the rainfall and heavy dews are more destructive to fully-developed flowers. In order to perform the operation of drying in the best possible way, all the flowers should be cut just before they are fully expanded, and whilst they are of the brightest and freshest appearance. The colour is better preserved in the dried specimen if thus secured, which is an important point to observe; especially is this the case with the *Helichrysums* and *Rhodanthes*. The first-named constitute, in the varied colours of their flowers, one of the most valuable classes of plants for supplying everlastings. They are easily grown, flower profusely, and produce their flowers with stout footstalks, that stand erect without any difficulty after being dried. When these are cut, it is a good practice to take some of the half-expanded buds also: these will be found to afford a better variety, and are generally of oven a deeper colour than the larger ones. Do not leave any of this family of annuals until the flowers begin to fade with age; the dark disc in the centre of each one then detracts from their beauty very materially. Should the idea occur that a sacrifice of flowers for the time being is made in cutting them so early, the

future should demand the most consideration; the due thought of which will be fully exemplified when flowers for decorative uses are scarce.

When the flowers are cut, a good length of stem should be secured for convenience in future arrangements. They should be tied up in moderately-sized bunches *tightly*; so that, when the stems shrink, none of them fall out. Every bunch should then be suspended in such a way as not to touch each other, but hang free of everything. A dry room, with a free circulation of air and but little probability of dust accumulating upon them, is a good place in which to place them. This suspending of the bunches causes the footstalks of the flowers to dry stiff and straight, thus being afterwards much more useful and effective when arranged in vases; this should be practised in the case of all everlasting flowers.

The ornamental grasses which are so useful for, and such great additions to, all arrangements, are best dried if arranged very thinly in vases or any receptacles at hand. In these they will thus stand erect, or in a natural manner, which in the case of grasses is better than being suspended, for they will be found to vary but very little in the process of drying. Grasses, like flowers, in every case should be cut whilst quite fresh (and green); thus a better colour is retained. If left till they are partially faded by age, they are more liable to fall to pieces later on. The process of cutting should in every case be performed whilst the flowers are quite dry, a bright sunshiny day being the best to choose; each respective kind should be tied up as soon as cut, and the after-treatment, as advised, be then seen to as soon as possible, before any become withered.

The illustration herewith given (taken from *The Garden*, by the kindness of Mr. W. Robinson) of an arrangement of dried ornamental grasses, is an example of what may be achieved with these alone, and quite independent of flowers of any kind. Such an arrangement would look exceedingly well either for entrance halls or lobbies, and be far preferable to attempting to cultivate living plants in impossible places. The same design would be appropriate to niches in the drawing-room, or, if slightly modified, to the sideboard in the dining-room. The larger-growing kinds, if not grown at home, can be purchased at a florist's shop.

Herbs, Drying and Preserving, for Winter Use.—Whilst treating on the subject of drying garden products, it will be advisable to include a few remarks on Herbs, which always find favour from a culinary point of view. This is the best month for this work; it should be done whilst each kind is in good condition, otherwise the flavour will be found to be deteriorated. The sorts most

suitable and best adapted to drying are Mint, Sage, Thyme (both the common kind and the lemon-scented), Balm, Basil (both bush and sweet), Marjoram (sweet), Savoy (summer and winter). These

as possible, or else the leaves, through being liable to crumble to pieces, will be partially wasted.

Parsley is not often dried, yet it may be done in a most effectual manner for winter use. The leaves



DRIED ORNAMENTAL GRASSES.

should all be cut whilst quite free from moisture, tied up in bunches, and then hung up in a dry out-house from the roof; or they may be tied on a pole at a little distance apart, and placed out of doors in the sun, being taken in at night, for a few days, until nearly dried up. When quite dry, they should be kept in a room free from dust, and disturbed as little

should be gathered whilst still fresh, and spread out thinly upon sheets of paper to dry. When this has sufficiently advanced for them to crumble to pieces, they should be rubbed between the hands, and afterwards, when quite dry, put away in tin canisters with close-fitting lids in a dry place until wanted for use. When first gathered, another plan might

be adopted, by picking off the leaf-stalks at once, and not rubbing the rest at all, then putting it aside, as in the other case, but comparatively entire. These are good plans to adopt when any difficulty is experienced in keeping Parsley fresh in the winter season, the green of which can then be retained exclusively for garnishing purposes.

The Greenhouse.—Plants that are intended for flowering through the winter and early spring months should now have every requisite attention paid to their cultivation. Those that need to be fresh potted should be seen to at once, so that the pots are again well filled with roots before the winter sets in. This is a point that should always be taken into consideration; for if the roots are not well established in the fresh soil, they will frequently decay when less active, through being surrounded with more moisture in the soil than they can assimilate. Camellias in pots may now be re-potted; if the pots out of which they have been taken are small in proportion to the size of the plant, and the roots in a healthy state, larger ones will be an advantage; these should be selected so as to allow of about one inch between the balls of the plants and the pots for fresh soil, or, in other words, two inches wider than the old pots. The soil best suited to their needs is a good yellow loam with plenty of fibre in it, and good peat in about equal proportions; to this may be added a few handfuls of bone meal or charcoal broken up rather fine; sand is always wanted, and should be used freely. The peat and loam should be partially broken up, but no smaller than can be worked down easily between the soil and the pots; to assist in this, so that it may be rammed down firmly, a potting stick is exceedingly useful. The pots should be quite clean, and provided with a fair amount of drainage. Should the roots appear unhealthy, with a tendency to decay, and not abounding in any great quantity either, the best way is to reduce the ball of soil and re-pot into the same size again. This is the best way to treat all that are not thriving in a satisfactory manner; as, indeed, it is many other plants which may happen to be in a similar condition. It is a great mistake to think that by placing plants in larger pots when they look sickly they will always regain their health; the opposite is often the case.

The large-flowering Geraniums or Pelargoniums that were advised to be cut down last month, will now be breaking forth into fresh growth. As soon as they are fairly well started, they may be re-potted, treating them as to soil, &c., as advised for Fuchsias in the spring. Afterwards they should be fully exposed to all the light possible, and either out of doors or in a cold frame, with but little water given

them for the first few weeks. Cinerarias, if growing freely, should be potted towards the end of August into pots one size larger only; and Primulas will need the same treatment if they have well filled their pots with roots, but not otherwise. The latter will flower better in rather small pots than the opposite extreme in size; press the soil around the roots as firmly as possible with the hands, but do not use a stick for the purpose in any case, or the tender rootlets may be injured. Lilliums (in pots) that have thus far been growing out of doors for some time past should, when the first flowers are on the point of ripening, be taken under cover, to guard against injury from rain, and to preserve the flowers in good condition for a longer period. A most useful and easily-grown plant for the late autumn and early winter flowering is *Echeveria retusa*; those who have not grown it will do well to give it a trial. It can be bought in the course of a few weeks showing for flower; some idea can thus be formed of its merits. But one of the chief features in its favour is the length of time it lasts in flower.

The small Roman Hyacinths and the Roman Narcissi, both of which can be had in flower easily at Christmas, should be bought and potted early in August. The first-named can be put into six-inch pots, using five bulbs in each pot, or into a smaller size with three in each. The Narcissi should have three bulbs put into the larger size. Similar soil to that used for Fuchsias or Geraniums will suit them very well. Arrange the bulbs so as to allow the crown of each to be just seen above the soil. When potted, give them a good watering, and stand them in a warm place in the open air, afterwards covering the pots with cocoa-fibre refuse or some light soil.

The advice previously given for all Chrysanthemums will still hold good, with the addition of more attention to a plentiful supply of water and keeping the pots free from weeds.

The Vinery.—The grapes will, during August, commence to colour in houses that have been brought on in a natural manner. Continue to stop the shoots until colouring commences, when it should be discontinued and more ventilation given. A free circulation of air is indispensable to perfect colouring and maturing of the fruit. If in any way possible some air can be kept on at night with safety, so much the better; this will prevent any moisture being deposited on the berries, which occurs if there is any omission in giving air before the temperature rises many degrees in the morning.

Work amongst Fruit Trees.—Those that are growing against walls may still require a little thinning out, particularly in the case of Peaches and

Neectarines, the fruit of which will now be all the better in every respect if exposed to the genial influence of the sun's rays, to facilitate the final swelling and ripening of the fruit. Those shoots that need another tie (or shreds and nails, if used instead) should have that attention at once, especially in the case of leading growths. These should never be allowed to get crippled or crooked; when either occurs, more support than would otherwise be needful has to be given. In the event of any fruit not swelling off properly, or being in any way deformed, it will be a better plan to remove the same at once, and direct the strength as much as possible to the rest. Bear in mind also the advice previously given as to thinning out the fruit where it is thickly placed. In some cases this may still require to be done; for as the fruit increases in size, the amount of the same as a crop becomes all the more apparent. It does not pay to be lenient in respect to this, or the penalty will have to be paid another season, in either a less crop or symptoms of weakness, which will ultimately result in the same failing. Amongst bush-fruits, the Raspberries should now have all of the wood that has this season borne a crop of fruit removed, by cutting it clean away at the base of the crown; and thin out also to about the required number of the young canes for another year's fruiting. This will admit more light and air amongst those that are left, and greatly aid in ripening each one, so that they will withstand a severe frost and the uncertain weather which we often experience in the early spring, in a much better manner. We have often noticed, where this has not been carried out, that the wood has been killed to a great extent, with a consequent loss of fruit and disappointment also, just as expectations of a good show should have been realised.

The earliest kinds of Apples and Pears will commence to ripen early in August. These should be gathered a few at the time, and *none* be left upon the trees until they are fully ripe, or the flavour will not be so sprightly, having more of a woolly taste and less juice. If all are gathered at once, the crop ripens in the same fashion, with every possibility of a waste, and that almost before any such thing is apprehended. Apricots ripen during this month, and are generally in fine condition towards the end of it. The fruit is of much finer flavour if left upon the tree until almost on the point of dropping off, being then of a deep colour and inclined to shrivel. Plums, too, when required for the dessert, ought to be left in the same way; but if intended for cooking purposes, they should be gathered a few days earlier.

Where wasps are troublesome, the nests should be hunted out and destroyed; they are generally to be

found on banks or beside hedges. Some tar poured into the hole, and the latter then plugged up tight to exclude the air, will suffocate them; or it may be done by a mixture of sulphur, saltpetre, and charcoal, all being powdered up fine before being mixed; to this should be added a little gunpowder to quicken its action. An impromptu gun, made out of a piece of the growth of an elder-tree, fifteen inches long and of about two inches diameter, and with a bore of about three-quarters of an inch, is a good weapon for discharging this mixture into the hole. In about three minutes afterwards the nest may be dug out, and all destroyed. We have adopted this system often, and always found it successful. All of this work has, of course, to be done at night-time, and requires some tact to avoid a sting or two. A protection to the face may be arranged in the way adopted by some persons when taking swarms of bees. A mixture of sugar-and-water or some stale beer will, if placed in bottles with rather small necks, attract a great number, and form a death-trap to them. This should be adopted whenever they abound in considerable numbers, and the nest cannot be hunted down.

Kitchen Garden.—There is still time left for following on other crops to take the place of those that are nearly or quite exhausted; but the sooner it is done, the better will be the results in nearly every instance. Do not, therefore, let anything remain upon the ground longer than is actually necessary. Spinach seed should be sown twice during this month; and if time cannot be spared to fork the ground over previously, a deep hoeing will suffice at this season. In either case no manure should be applied, for an over-luxurious growth is not the best by any means for the autumn and early winter. Those who have not hitherto devoted much attention to Spinach culture are advised to extend their trials, for it is a most delicious vegetable when cooked as it comes fresh from the garden, and is also of easy cultivation. If Onions are not showing signs of dying down, and their tops not falling over, by the middle of the month, each one should be bent over, in order to prevent the ascent of the sap and to aid in ripening the bulbs, so as to gain time for another crop to follow. The ground occupied with Onions comes in useful for the early spring Cabbage sown last month. If any breaks are still to be seen amongst crops intended to stand on through the winter, the filling up in each case should be seen to without any delay. This will often occur through no fault at all, and causes the crop to look patchy.

The earliest of the Celery should be fit for partially earthing up towards the end of the month, so that it may be in a good condition to dig for use by

Michaelmas Day. Celery will now require a liberal supply of water to encourage a free growth; if allowed to suffer for want of it, there will be a disposition to run to seed. Two sowings of Lettuce and Radishes during August will provide good material for saladings in the next two months. Of the former, for the later sowings the Cabbage Lettuce should be mainly relied upon: it is so convenient for filling up every square yard of ground, and can be planted in many places where the larger kinds would not grow. The Broad-leaved Italian Corn Salad, if sown early in the month, will be very useful for cutting after the Lettuce are used up or caught by the early winter frosts. It should have an open and sunny spot, otherwise treated as recommended previously for Water-Cress. This latter esculent should now be found most useful if treated as advised. The largest of the Beetroot will be fit for salads by the middle of the month, and afford an excellent addition thereto. Cauliflower seed, to provide plants for wintering under hand-glasses or cold frames, should be sown about the 21st; but if neither of these accessories are available, it is better to buy the plants in the spring. Do not allow Vegetable Marrows to extend themselves so as to prejudice any other crops. They will do this if the room is limited, and no measures are taken to prevent it. If noticed in time, the best way is to stop the shoots; later on the best plan will be to endeavour to turn the point of each one round, so that it may retrace its steps, so to speak. During hot and dry weather supply this vegetable with a liberal amount of water, if in any way possible.

Tomatoes will, in addition to advice previously given, now require to have rather more of the foliage thinned out, a little at the time. This will assist the ripening of the main crop of fruit, by admitting more light and a better circulation of air. Towards the end of the month all young shoots should be persistently stopped, and the flower-spikes also, if there are any. No fruit can be expected to commence swelling later than that time with any prospect of even partial development in a sufficient manner to be of any use. Cut the fruit as soon as well coloured, and before there is any disposition to split. This will generally occur after a shower of rain, and cause the fruit to decay if not soon used. So much water will not be needed at the root when the chief part of the crop is ripening; no more than is really necessary should then be given, the chief aim being to keep the soil rather dry, and consequently, to a slight extent, warmer also. Thus treated, there will not be so much fear of an attack of the same fungus as causes the blight amongst Potatoes, which are nearly related to the Tomato, and frequently infested in a similar way upon the growth.

Hoeing and Cleaning.—The hoe and the rake should still be freely used on every available spot of ground. This work, if perseveringly followed up, makes a wonderful difference in the general appearance in every department. Even amongst shrubs it should not be overlooked, for weeds often grow up there and escape notice, possibly even until the seeds are scattered by the wind. Any tall weeds that are showing themselves amongst crops where the hoe cannot be conveniently used should be pulled up by hand without any delay, and before they have a chance of seeding. If rubbish is found to be accumulating to an inconvenient extent, the better plan will be to take advantage of the first opportunity to burn it up. This is far better than allowing it to decompose, for after it has been burned it makes an excellent manure, either for the open ground, or for mixing with other soil for pot-plants.

The Cultivation of the Strawberry.—This universally-appreciated and widely-grown fruit well deserves to have every possible pains bestowed upon its culture. It is frequently to be met with in but poor condition: barely existing, in fact, and consequently condemned as a failure. This failing in nearly every instance may be overcome by good cultivation, for we have not yet come across one single case in which by judicious management a good return might not have been obtained. Probably the greatest mistake that is made is that of allowing the beds to remain several years without renewal, yet expecting a good crop every year. This is against all reason, for whilst the ground is cropped with strawberries, it cannot be dug deeply and well broken up to any great depth; neither can the soil be enriched by a good dressing all over so as to benefit the plants in a proper manner. To succeed in a satisfactory manner, a fresh plantation should be made every year, even if ever so small; and after three crops have been gathered in successive seasons, the plants should be destroyed. After that time the crop is not so reliable and never so remunerative, whilst the fruit itself is also inferior in size and quality. It may be urged that the room at disposal will not permit of a yearly renewal; but after having been adopted, the advantage will be apparent, for as much weight of fruit will be produced upon two-thirds of the ground when thus treated, as compared with that occupied by old plantations. It does not involve any more labour in the long run, nor does it nearly so much impoverish the soil. No doubt many who have grown strawberries will have noted in the case of old beds, that although the foliage is healthy there is a scanty show of blossom, and consequently of fruit afterwards. This is caused by age alone,

the plants becoming in a manner barren and unfruitful for want of a change of soil. After a very dry period the old beds frequently appear almost parched up, with but a semblance of vitality left in the plants; this is caused by weakness, consequent upon the roots being nearly all close to the surface, and therefore unable to sustain the plants. After several years' practice we have noted these failings, and therefore strongly urge all who grow their own strawberries to renew their plants as previously advised.

Preparation of the ground for strawberries should be proceeded with as early as possible in the month of August. By that time some of the earliest crops of vegetables will have been removed, such, for instance, as Cauliflowers, Peas, and early Potatoes (where grown). Some well-decomposed manure—that from the farmyard being about the best—should be applied and dug in as soon after it is spread upon the soil as is possible, in order to prevent the escape of the ammonia. The ground should be broken up two spits deep. If it was so treated for the previous crop, the bottom spit will merely want forking up; but if otherwise, the spade alone should be used, and some of the soil at the bottom be brought to the top, and that formerly at the top buried along with the manure. When this is completed, a few days should be allowed to elapse before the planting is done, in order that the ground may settle down somewhat. Then, when the soil works well, the planting may be proceeded with, but not immediately after rain if the ground is sticky.

The closest distance at which they should be planted is two feet between the rows and eighteen inches from plant to plant. Before every row is planted, the soil should be trodden down in a line with the plants; this makes it better for the strawberries afterwards, with less danger of the soil cracking or parting from the plants should it be a dry time. The plants should be turned carefully out of the pots in which they were layered, as we have previously advised, and planted about one inch deeper in the soil: this will protect the roots from injury. Afterwards attention should be given to watering according to the state of the weather, one good turn being given as soon as the planting is completed in every case. The after-attention will be but slight, the chief thing being to remove all runners as soon as they appear, in order to concentrate all the strength possible in the young plants. The ground between them should be kept free from weeds by frequent and light hoeings. If the utmost use of the ground is an essential point, an intermediate crop may be taken between each row. For this we recommend the

prickly or winter Spinach, which will, if sown soon afterwards, give a good return the same autumn and winter. When this crop has been taken, no other intermediary one should be allowed on any account.

Plantations that have borne one or two crops of fruit should have the soil occasionally stirred between them, so that the full benefit of any downfall of rain may be gained, and the ground at the same time kept free from weeds. No more runners should be permitted to extend beyond the old stools, either between the rows or the plants themselves; at no time should they be allowed to grow together so as to form a continuous line, with the assumption that thereby a better crop will be obtained another season. If in any case there is a plentiful supply of manure available, a good top-dressing would be highly beneficial to the plants, and assist them in gaining more vigour for another crop the following season. If the weather is unusually dry, a thorough watering would greatly benefit the plants, keeping them in growth, and thus preventing a secondary growth later in the autumn, after a change has set in.

The following is a good selection of kinds to grow, which we give in the order of their ripening as nearly as possible: viz., Laxton's Noble, a new kind, fruit fine; Vicomtesse H. de Thury, an older but well-tried and reliable sort, rather acid in flavour, and excellent for preserving; Keen's Seedling, good in some soils where it will thrive; President, a strong grower and heavy cropper, one of the best kinds to grow for all-round use; Sir Charles Napier and Sir Joseph Paxton are two splendid sorts: the latter is the kind so often met with in quantity in the shops; Waterloo is a fine late kind, of good quality, and with large fruit. British Queen is one of the finest flavoured strawberries grown, but is very fickle as to the soil, &c.; a few plants only should be tried at first of this, so as to ascertain its suitability in each case. Other kinds could be named, but those herewith given are amongst the best of all for general use, and any multiplication of varieties is not desirable unless there is ground to spare for making experiments.

Old Strawberry Beds that are not intended to be reserved for another season's crop should be broken up at once, and the space occupied with something else suitable to each case. Late rows of Celery, Celewort Cabbages, or Broccoli for the spring, will each turn in useful on such ground. In any case do not permit the plants to remain upon the ground for two or three months before destroying them, and thus in the meantime have the soil all the more exhausted to no purpose whatever.

THE FUTURE OF OUR BOYS.—I.

THE choice of a career for young people of both sexes is an affair of the greatest consequence. On the wisdom of the choice to be made depends to a great extent the happiness, the usefulness, and the success in life of the individual chiefly concerned. It is only natural, therefore, that parents should be extremely anxious to put their children in the situation for which they are best fitted, so that there may be no room for subsequent regret.

Excepting in the rare cases where there is a special and undoubted aptitude for a special kind of work—an aptitude so decided that in itself it contains a promise of success—it is a pity to let a boy drift into a career. The people who have the greatest chance of succeeding in any particular line are those who have been trained to it, and prepared to fulfil its requirements. The lack of careful training for the work which has to be done has been the ruin of thousands. If it is at all possible, therefore, it is well for parents to determine while children are still at school what their future shall be, so that in good time they may be prepared for what is before them. If they are intended for one of the professions, they can then work for a scholarship preparatory to entering the University, or they may devote their attention to classics; if they are to follow a trade, they can be grounded in its first principles; if they are intended for a commercial life, they can devote themselves to figures. But they will find it an immense advantage to take their preliminary steps quietly, before the anxieties of life commence, being well equipped for the race which they are to run.

There are many parents who never think of deciding thus what the career of a child is to be. They say to themselves, "I will give my child a good education, and so make him fit for anything. I shall then have done what I can for him, and afterwards he must make his own way, choose his own career, and fight for himself." Parents who think and act thus are rather hard on the young people. Boys and girls have not the wisdom or the knowledge necessary to choose their own career. They want guidance and help; and one of the most effectual ways in which a parent can help a child is to put him on the road upon which he can march to competence and usefulness.

The difficulty belonging to the choice of a career for young people is much greater now than it used to be, owing to the competition which everywhere prevails. At one time it used to be taken for granted that the chief point to be considered in a choice of this character was the taste and disposition of the intended worker. Now every calling is so

crowded with applicants, that the point for consideration of paramount importance is the possibility of the situation, and parents have to decide, not whether their son will like such and such employment, but whether he can get it. Position and opportunity are now so highly valued that it is quite usual for well-to-do parents to pay large sums in the way of premium in order that their sons may take a place in the ranks of the workers. Instead of trade and commerce being looked down upon by the aristocratic portion of society, we now see successful commercial men treated with the greatest respect; and even the connections of royalty do not disdain to enter the field where money is made and won. The consequence of this state of things is that influence is one of the aids to success much sought, and individuals who have made their mark, and carved out a way of making a competence, are on every side besieged for patronage. There are, nowadays, parents who believe firmly that only those who have influence have any chance of gaining a position, and these parents declare that the only thing to be done by those who lack influence is to take advantage of the first opening that can be found, and let a boy make the best of it.

Statements of this kind are very disheartening, but they are somewhat exaggerated. Ability and industry tell in the long run now as much as ever they did; and a boy of exceptional capacity will make his way, if he has scope for his power, even though he cannot count upon influence or patronage. Now as much as ever is it true that, as Carlyle said, "There is always room at the top;" and it has been found again and again that what seemed to the parent exceptional advantages, have been a hindrance to a boy's success rather than an aid thereto. The boys who make a signal success in life are more often those who have been thrown on their own resources, and who have been called upon to fight for their own hand, than those whose parents have paid a high premium in order that they might take a certain position. Indeed, too often, the boys who enter a profession or trade through the payment of a premium are tempted to waste their time. Feeling that they are propped up by their parents and guardians, they do not exert themselves, and so they make no headway. Parents are of course bound to help their children as much as they can, but it is probable that the help given would be of more service if it expended itself in choosing a career wisely, and thus setting a boy in the position for which he was best fitted, and in training him betimes to fill that position, than in supplying him with leading-strings which may

prevent his going alone. By way, therefore, of helping parents to make this choice, it is proposed here to describe some of the various occupations open to boys, giving as far as may be the mode of preparation and entrance, the prospects, advantages, and disadvantages belonging to each at the present time.

Occupation and Health.—Before doing this, however, it will be well to remark that the health of a boy should always be considered in choosing his career. That some occupations are more healthful than others is evident from the averages of mortality, and also from the fact that certain diseases are produced by certain callings. Therefore, if a boy is weakly in any one direction it would be obviously unwise to put him to a calling where demands were made upon powers in which he was deficient, or where he had a tendency to the complaints common in that calling. If a boy has weak sight, he should not be put to an occupation which calls for clearness of vision; if he is ailing and delicate, he should not be condemned to constant employment indoors, where he will be chained to a desk, and have no exercise or fresh air. Many a boy has failed in life because those who chose his career did not regard sufficiently his physical and mental capacity before deciding what his occupation should be.

From this point of view the choice of a career is undoubtedly a subject of some difficulty. Almost every occupation exposes its followers to one source of danger; there is no employment which is absolutely free from fear of accident or mischance. Still, parents may do much if they will bear the subject in mind. They, better than any one, know to what weaknesses a boy is disposed, and what conditions are likely to be specially harmful to him. They might, therefore, easily avoid evils which are calculated to tell upon him if they understood the source of mischief belonging to each.

In this connection the following list of complaints most common in different trades and occupations may be of value. The information given is compiled from the highest authorities:—

Consumption is common amongst the following trade workers:—Grinders, flint-workers, grindstone-makers, brushmakers, pin-pointers, cutlers, stone-cutters, glass-makers, silk carders, carpenters, cabinet-makers, goldsmiths, electrotypers, mirror-makers, needle-polishers, file-cutters, lithographers, sieve-makers, engineers' stokers, shoemakers, tailors, and other persons who work in ill-ventilated rooms.

Bronchial Catarrh is often found among etchers, sugar-refiners, lithographers, cotton, flax, and hemp operatives, carpet-beaters, hair-pickers, coopers, boatmen, and fishermen.

Poisoning of Blood or Skin.—Manufacturers of chemicals, aniline dyers, bronzers, artificial flower makers, hatters, lead-workers, enamellers, painters.

Lung and Throat Troubles of different kinds attack diamond-cutters, feather-workers, printers, compositors, workers in pottery and porcelain, actors, clergymen, public singers, and public speakers.

Brain Diseases and Diseases of the Head.—Artists, clerks, lawyers, literary men, students, teachers, workers in india-rubber.

Rheumatism is common amongst farmers, agricultural labourers, drivers, bakers, cooks, blacksmiths, engineers and stokers on railways, men who work at forges, iron puddlers, glass-blowers, dyers, coopers, shoemakers, and tailors.

Eczematous Eruptions are usual amongst bleachers of cloth, chemical manufacturers, fullers, millers, grocers.

Heart Complaints prevail amongst athletes, prize-fighters, gymnasts, wrestlers, and pressmen.

Diseases of the Nervous System, being the result of worry, are experienced chiefly by gamblers, brokers, merchants, physicians; also by seamstresses and tea-tasters.

Dyspepsia and Liver Complaints are common amongst brewers, butchers, watchmakers, and clock-makers.

Accidents.—The workers most liable to accidents are bricklayers, masons, miners, railway employes, engineers, firemen, ostlers, dog fanciers, stone-cutters, washerwomen, physicians, factory operatives, machinists, quarrymen, roofers.

Diseases of the Eyes prevail amongst engravers, lapidaries, watchmakers, workers in feathers, workers in india-rubber, seamstresses, and literary men.

The trades and occupations which may be described as the healthiest are those of farmers, brick-makers, charcoal-burners, catgut-makers, tanners, and leather-dressers, coppersmiths, gilders.

The following estimate of the probable duration of the life of individuals employed in various ways, may also be of interest in this connection. It is compiled from reliable sources. It should, however, be remembered that the mean age at death of people in different businesses is occasionally somewhat misleading with regard to the healthfulness of a business, because the age at death is affected quite as much by the ages at which people enter and leave it, as by the increase or decrease of employment, and the salubrity or insalubrity of the profession:—

Veterinary Surgeons and Farriers, Physicians and Surgeons, Chemists and Druggists, Railway Servants, and Earthenware Manufacturers, experience a mortality much above the average.

Manufacturers of Chemicals, Dyes, and Colours; Tool, File, and Saw Makers; Glass Manufacturers;

Copper Manufacturers; Puddlers; Miners; Tobacco-nists; Commercial Clerks; Printers and Bookbinders; Mercers and Drapers, suffer a high rate of mortality. Next in order to them, but with a mortality not quite so high, may be placed *Hairdressers, Barbers, and Wig-makers; Hatters; Tailors; Bakers; Iron Workers; Wood Workers; Metal Workers; Carvers and Gilders; and Blacksmiths.*

Coachmakers of all branches, working in wood, iron, binding, and paint; *Booksellers and Publishers; Wheelwrights; Carpenters, Joiners, Sawyers, and Workers of Wood* generally; the *Wool, Silk, and Cotton Manufacturing Population; Shoemakers; and Grocers*, are all fairly healthy. Their mortality is low.

Amongst the healthiest classes of the population are *Farmers, Agricultural Labourers, and Game-keepers.* The *Clergy* of the Established Church, Protestant ministers, Catholic priests, and *Barristers*, all experience low rates of mortality from ages 25 to 45. The clergy lead a comfortable, temperate, domestic, moral life, in healthy parsonages, and their lives are good in the insurance sense. The young curate compared with the young doctor has less cares.

The mortality of *Catholic Priests*, after the age of 55, is high; perhaps the effects of celibacy are then felt.

Choice of Careers.—Having ascertained what are the advantages and disadvantages of a career from the point of view of health and suitability, the parent next has to consider the prospects of success attending each one, together with the steps which have to be taken in entering the same. We will take these one by one.

The Theological Profession.—The preparatory course which must be gone through by a young man who intends to be a clergyman or a Dissenting minister is both long and costly. As a matter of course, he should have received a first-rate elementary education, and he should remain at school until he is old enough to go to college. Besides the Theological Faculties of the Universities of Oxford, Cambridge, and Durham, there are throughout the country a number of Theological Colleges belonging both to the Church of England and the Dissenting bodies, and a young man must attend one of these who wishes to qualify for the profession. Amongst the best-known of the Church of England are St. Aidan's College, Birkenhead; St. Augustine's College, Canterbury; the College of St. Peter and St. Paul, Dorchester; the Colleges of Chichester, Cuddesdon, Ely, Gloucester, Leeds, Lichfield, Lincoln, and Highbury, Islington; St. Stephen's House, Oxford; Salisbury; St. Bees, Truro; Warminster, Wells, &c.

There are also the Theological Colleges of the Church of Scotland; the Methodist Theological Colleges, under the direction of the Methodist Conference; the Congregational and Baptist Colleges of Airedale, Moseley, Cheshunt, Hackney, New College, Bristol, Regent's Park, Rawdon, &c. Each one of these colleges has its own regulations and advantages, and each one prepares young men for their future career, and also, when the period of preparation is complete, puts them in the way of following their profession. Thus the student is qualified for his work, and is ready for any opening that can be made for him.

Having duly qualified for Holy Orders or for the ministerial profession, the prospects of the position become a subject of interest. On this point it is well to speak plainly. For a fortunate few who have exceptional ability, natural eloquence and tact, or who have influential connections and private means, the prospects of the theological profession are very good. In itself it confers a certain degree of respectability on those who belong to it, and it is rich in possibilities. There is nothing in the circumstances of the case to prevent an able young man from becoming a bishop or archbishop, and the highest posts are open to his ambition. For the large majority of individuals, however, those who have no private means, and who cannot use influence, the prospects of the profession are bad, and every year they become increasingly bad. There are at the present time hundreds of able, conscientious, industrious curates and ministers who are giving the best of their strength for a very small stipend. In several of the rural districts of England there are numbers of clergy whose incomes have within the last few years fallen to such a great extent that it is barely within their power, by exercising the greatest thought, to feed and clothe their families: education of a character suitable to their position being in too many cases out of the question.

Casual observers who have this picture of the prospects of the clergy presented to their notice may think it is too darkly coloured. If they will inquire, however, they will find that it is not so. The clergy of the Church of England are, of course, in a better position than any, yet there are large numbers of clergy who have to endure fearful privations. There are at present about 21,000 clergy engaged in parish work in England and Wales, 14,000 of whom have benefices. Yet nearly 400 of these benefices are under £50 a year in value, and at the lowest estimate there are 3,600 beneficed clergymen whose professional incomes do not amount to £150 per annum. A large proportion of the clergy are stipendiary curates, whose incomes do not average more than £130 a year. Without

private means these curates cannot marry, because they cannot afford to do so: they are compelled to keep up a certain appearance because the exigencies of their profession require it, and they are very greatly to be pitied. They try to eke out their limited income by literary and other work; but the difficulty of securing chance employment of this kind is very great, and after struggling ineffectually for a time, numbers of them lose heart, and their enthusiasm dies under the pressure of the small economies which they are obliged to practise.

The fact of the situation is this: There are a few individuals, possessed by the enthusiasm for religion, who feel themselves the subjects of a call to the work of religious teaching which they must obey. These individuals *must* mount the pulpit; there is nothing that will prevent them, and possibly their zeal will overcome obstacles, and lead them to success. But there can be no greater mistake than for persons who are not possessed by this enthusiasm, who have no influence, no private means, and no other source of income, to enter the theological profession by way of making a good living. Such a course leads nowhere but to disappointment. At the same time, when influence can be brought to bear, where there are private means, or a good opening, there is no doubt that a clergyman's or a minister's life is as happy and healthy, and as free from care, as could be chosen.

The Bar.—The members of the legal profession are divided into two classes, Barristers and Solicitors. A career at the Bar is a career which offers perhaps more attractions than any other to young men of ambition and ability. Such large incomes are enjoyed by those who succeed in it; so many desirable appointments are open to those, and to those only, who belong to it; and it affords such grand scope for the exercise of exceptional ability, and such splendid prizes are dangled before the eyes of those who have been called to follow it, that there is no wonder it should be as overcrowded as it undoubtedly is. It is true that in these days all professions are overcrowded. There is not one which could be named where fierce competition does not prevail. Yet in none is the competition more fierce than in this; and parents would do well to realise the fact before they permit their sons to enter its ranks. The preparation for it is long and costly. It is at once the most promising and the most disappointing of careers; and this being so, it is well to have a clear idea of the possibilities of every kind which are attached to it before entering it.

One reason why the Bar is held in high repute is that it is essentially a vocation belonging to the well-to-do. This it must be, on account of the expenses associated

with entering it. These expenses are unavoidable; they must be met, and it has been calculated that even where strict economy is observed, the preparatory expenses can scarcely ever be less than £400. This estimate is made apart from living expenses; it includes only fees, stamp duties, commons and dues, "coaching," and incidental expenses. When the cost of living has to be added to the estimate, the expenses are increased according to the habits and mode of life of the student; and thus it has come to be taken for granted that unless a man has a private income, and can afford to wait for several years before he earns money to live upon, he would be foolish to enter for the Bar.

The first step which has to be taken by a young man who determines to become a barrister is to join one of the Inns of Court. Of these societies there are four: Lincoln's Inn, the Middle Temple, the Inner Temple, and Gray's Inn. The last-named of these is the smallest of the four. These Inns of Court do little for the individual who belongs to them. They do not help him to study law at all, and all that he has to do in connection with them is to eat a certain number of dinners for a certain number of days during a certain number of terms, in the hall of the Inn to which he belongs. The dinners are called "commons," and a fixed charge is made for them. Fees have to be paid before the terms are kept and after the terms are kept.

Before a student can be "called" to the Bar, a public examination has to be passed, and a certificate obtained. In order to secure the requisite training, a certain amount of coaching has to be arranged for. By way of gaining a knowledge of legal practice, it is usual for barristers to "read in chambers," as it is called: that is, to enter a barrister's office and take part in what is going on. Permission to do this has to be paid for, of course, and the price paid varies with the standing of the barrister to whom the office belongs.

In order to gain practice and acquaintance with legal technicalities, many would-be barristers enter a solicitor's office before they begin to keep their terms. The method is a very excellent one, and is to be recommended.

After being duly "called," the barrister usually takes chambers, procures the paraphernalia of his profession (an important part of which is a wig and gown), and endeavours to make a beginning on his own account. To do this, he either joins a circuit, attends sessions, or attaches himself to a well-known barrister, and works for nothing until he can get known, which is called "devilling." It is at this stage of the proceedings that influence and legal connections will be of value. It is always an advantage to a barrister to be on good terms with

one or two solicitors of repute, who can put work in his way. Very often, however, it seems as though success or failure depended a good deal upon accident. Undoubtedly it depends largely upon a man's power of seizing opportunities which may occur to him, and making the most of them. Numbers of men reach the point of a barrister's career when they are "called," and go no further. They wait, and nothing comes, and after a time turn to something else. The ranks of literary men are, it is said, largely recruited from those of barristers who have never had a brief. Others, more clever or more lucky, go on to success, and in due time obtain one of the many appointments which belong to their profession. Those who really distinguish themselves secure very handsome incomes, and enjoy both wealth and reputation.

Solicitors.—The position of a solicitor, an attorney, or a lawyer (for all practical purposes the terms are interchangeable), is generally regarded as inferior to that of a barrister, but there is much less risk associated with it. It is, however, a most honourable position, and it gives ample scope for the exercise of intelligence, tact, and all high qualities. Also it is a calling in which good fortunes are made; so that it is altogether a desirable, important, and influential profession.

In the first instance, the great thing which a parent has to do who intends his son to be a solicitor is to give him a good general education. It would be little use for an illiterate, uneducated person to hope to make his way in the law. On leaving school, the student must be "articled," or "enter into articles of clerkship," in a lawyer's office; his articles must be enrolled and registered, and a stamp duty, costing £80, will have to be paid on them. Before the articles can be executed, the student will have to pass a preliminary examination, and he will have to go through one or two examinations during his term of service. In almost all cases he will have to pay a premium to the solicitor with whom he is articulated, and the amount will vary with the character of the office into which he enters. The period of service required will also vary somewhat. Students who hold University degrees, and those who have been employed as *bonâ fide* lawyers' clerks for ten years, and during that time have actually transacted legal business, can be articulated for three years; those who have passed certain specified examinations can be articulated for four years; all other persons must be articulated for five years. After serving his term, no candidate can be admitted to practise as a solicitor until he has passed a final examination, and he will not be eligible for practice until he is twenty-one years of age.

After serving his articles, and receiving his certificate of admission, the solicitor either starts business on his own account, if he has any hope of obtaining a connection, or he engages himself as clerk in a lawyer's office. Articled clerks can generally earn a moderately good salary to begin with—from £100 a year upwards; although clerks who are not articulated do not expect to earn nearly so much. There are, of course, numbers of lawyers' clerks who are not articulated, and who never obtain the solicitor's certificate. These clerks are for the most part individuals who have been obliged to earn money during youth, and who have been unable to pay the cost of articles. The prospects of such clerks are not nearly so favourable as are those of duly qualified clerks. Having once obtained a footing, it is expected that the latter will go on to competence and independence. They have to use their talents and watch the tide of fortune so that they may take it at the flood; but if they are steady, industrious, honest, and able, and if no crushing disaster hinders their progress, the majority are tolerably certain to attain a fair measure of success, and a few will go on to be abundantly prosperous.

The Medical Profession.—The study of medicine should never be undertaken lightly. Medical students and their friends sometimes say and think that the medical course is too difficult, that the work required is too arduous, and that the qualification ought to be lightened. It is earnestly to be hoped (and, fortunately, it is to be expected) that the medical qualification will be far more difficult in the future than ever it has been in the past.

Medical science is at the present time advancing by leaps and bounds, and there is no direction in which it is likely that greater progress will be made during the next fifty years. New theories about the cause and treatment of disease have arisen, and doctors are beginning to think that they can accomplish more by preventing illness than they can by curing it. Consequently there is more hope that really talented and earnest workers may make their mark in medicine than perhaps in any other direction. The promised advance can, however, only be accomplished by men who are very much in earnest, who have very good abilities, and who have great patience; therefore, for the sake of the community, it is to be hoped that only men thus gifted will become doctors. By all means the profession should be avoided by those who simply want to make money, for the prospects of success in connection with it are very precarious. Every year it becomes increasingly difficult for men to obtain a practice: established practices and partnerships fetch higher

and higher prices; and medical appointments involve very hard work and very little pay. It is true that in the medical as in other professions "there is always room at the top," and a few successful doctors make princely fortunes, and seem to coin money; but for every one who prospers thus, there are a hundred who fail; and a large number who maintain a hard struggle for years, are unable to provide for their families, and too often fall early victims to the many dangers which surround their path. This is a true statement of the case, and it is well that parents should know it.

A young man who intends to become a doctor should receive a good education. If he intends to obtain the higher qualifications, and if it is at all possible, he should go through the University, partly because the University training disciplines the mind and makes it more capable of study, partly because a shorter preliminary course of study is required from men who have degrees, and partly because the possession of a University degree is always an advantage to men who seek appointments. The possession of this degree is not, however, indispensable, and the majority of medical men do not have it. Yet, though the University training may be dispensed with, it is important that the intending medical student should from an early period study mathematics, French, German, and chemistry. The first preparatory step which has to be taken by a man who intends to be a doctor is registration as a medical student in the manner prescribed by the General Medical Council. A syllabus of the regulations to be observed and the fees to be paid can be obtained from the Registrar, 299, Oxford Street, London, W. Before this can be done, a Preliminary Examination has to be passed in Arts, and this examination must in all cases include elementary mechanics. There are certain examinations which are recognised by the Medical Council as equivalent to the preliminary examination, and young men who hold certificates from these are exempted from the other.

Students who do not possess a certificate of examination from any one of these bodies must pass one or other of the following preliminary examinations:—The Matriculation Examination of the University of London, a syllabus of the details of which can be obtained from the Registrar, Burlington Gardens, London; the Examination in Arts of the Society of Apothecaries, which is conducted by means of printed papers, a detailed syllabus of which can be obtained from the Secretary, Society of Apothecaries, Blackfriars, London, E.C.; and the Examination of the College of Preceptors, details to be obtained from the Secretary, Bloomsbury Square, London, W.C.

Before a student of medicine can become qualified

to practise, he must have studied professionally for four years, and he must also have passed certain examinations. The best thing he can do, therefore, is to attach himself to one of the medical schools now associated with various hospitals, both in London and the provinces. Here he can study medicine at the fountain-head, and can follow the routine laid down. If additional coaching is needed, he will be in communication with the men most likely to help him, and he can present himself for examination from time to time, according to the rules of the school. Until he has passed these examinations he cannot receive the licence to practise. The regulations of the College of Physicians and the College of Surgeons require that at least two years and a half of professional study shall be passed at a hospital medical school, and of course it is an advantage when the whole of the four years of compulsory study can be thus passed. This, however, is an arrangement which must be determined by the student.

The *Qualifications* taken by medical practitioners vary considerably in value. The licensing bodies from whom certificates are obtainable are the following:—

The Royal College of Physicians of London.—Licence, L.R.C.P.

The Royal College of Surgeons of England.—Diploma, M.R.C.S.

The Society of Apothecaries.—Licence, L.S.A.

The King's and Queen's College of Physicians in Ireland.

The Royal College of Surgeons in Ireland.

The Apothecaries' Hall, Ireland.

The Royal College of Physicians, Edinburgh.

The Royal College of Surgeons, Edinburgh.

The Faculty of Physicians and Surgeons of Glasgow.

The University Medical Faculties.

The large majority, however, of medical students take the diplomas of the licence of the royal colleges. Only a limited number go on to take the higher University degrees.

The cost of the medical training, and the work to be done before a diploma can be obtained, varies immensely, according to the standing of the medical school. Medical education is expensive, of course, and it has been calculated that no one who cannot command £200 a year during training, or £1,000 altogether, and who cannot afford to wait some years before making a living, should think of being a fully-qualified doctor. Nevertheless, it has to be remembered that there are several branches of the medical profession. Physicians occupy themselves with the treatment of disease, and they seek the highest qualifications; surgeons perform operations; and any one may practise medicine who has

been properly registered, attended a recognised medical school, and passed one of the many preliminary recognised examinations. Young men who wish to practise *Dentistry* attend a dental hospital; those who wish to practise *Veterinary Surgery* obtain their diploma from the Royal College of Veterinary Surgeons, or one of its affiliated schools. The cost of qualification in these branches is not nearly so serious as it is in the higher branches, and honourable rank is held by men who hold positions associated therewith. It is always easy to ascertain what certificates must be obtained, and what fees must be paid, by applying to the registrar of the school chosen. Also, it is well to remember that in connection with almost all medical schools there are scholarships, gold medals, and other prizes open to competition, and students who can obtain one or two of these find the cost of training much lessened.

It is often said that the hardships of the medical profession do not commence until a man is duly qualified. In this profession, as in all others, the competition is now exceedingly keen, and the cleverest doctors have generally to wait some years before they can gain a footing. The easiest and perhaps the most usual way of obtaining a practice is to buy one. This method, however, is not always possible. In thickly-populated districts it is not at all uncommon for medical men to commence practice on their own account: rent a house, put up a brass plate, and wait for patients to come to them. This procedure is sometimes successful, but it is very risky. The colonies are known to supply good openings for young men of talent; and doctors who enter the medical service of the army or navy have a fair chance of success. Medical appointments exist, but they are eagerly sought; and of late years the number of applicants has been so much in excess of the number of appointments, that salaries have dwindled, and positions have become almost honorary. Nevertheless, it is in medicine as in other professions—the good things are for those who can work and wait. Talent and honest perseverance generally succeed in the long run, and a clever steady doctor is almost certain to make his way, though the probabilities are that he will approach middle age before he overtakes success.

Pharmacy and Chemistry.—A subordinate branch of the medical profession is followed by men who devote themselves to pharmacy, chemistry, and the dispensing of medicine, and in this direction large fortunes have been made and honourable positions secured, although at the present time the business of a chemist and druggist is not at all what it once was. Yet still, it is one of the most re-

munerative of trades. In order to enter it, however, special training has to be obtained.

Before being allowed to set up as a chemist and druggist, it is necessary that a candidate should have served a three years' apprenticeship to a registered chemist and druggist. He must then go up for the preliminary examination of the Pharmaceutical Society, although from this examination he will be exempted if he can produce a certificate from one of the University local examining bodies. Before he can be registered as a chemist and druggist, he must produce a registered certificate of birth, showing that he was twenty-one at least three months previously, and pass two examinations—a Minor Examination and a Major Examination. The fees and subscriptions for passing these examinations, with the cost of coaching, apparatus, &c., would be at least £80. All information, however, concerning the dates of examinations and fees to be paid can be obtained on application to the Registrar of the Pharmaceutical Society, 17, Bloomsbury Square, London, W.C.

The Army.—Strictly speaking, the army is a profession where, so far as the higher ranks are concerned, money is spent rather than made; yet so many people join it, and gain honourable positions in connection with it, that it constitutes one of the most important of the "careers" open to boys. Not very long ago the army was looked upon as one of the few professions suitable for rich men's sons, and the regulation that commissions could be purchased, rendered entrance thereto easy for men who could afford to pay the price. But the abolition of purchase has altered this state of things, and commissions now are given only to those who have succeeded in passing a severe competitive examination after training. Before training can be commenced, a preliminary examination must be passed; but this is stiff enough to exclude all who do not possess good ability and have had a good education. After passing this examination, the candidate either enters the Militia or attaches himself to one of the Military Colleges, Woolwich or Sandhurst. The Woolwich Royal Military Academy is intended for the Royal Artillery and Royal Engineers. The instruction extends over two years, and the cost varies with the position and standing of the candidate. A few favoured individuals, known as the Queen's Cadets, get their training free. The sons of military men also enter on much easier terms than do the sons of private individuals. Speaking roughly, it may be said that the cost is from £40 to £80 a year for sons of officers, and £150 a year for all others: young men entering from sixteen to eighteen years of age. The Sandhurst Military College is intended for commissions in cavalry and infantry: the rate of payment is

about the same, but the instruction extends over one year only, and candidates may enter from seventeen to twenty-two years of age. These payments, however, by no means cover the entire cost of training. The majority of candidates have to study with a "crammer," and the fees required are somewhat high; and when every necessary expense has been paid, it is seldom found that a young man, the son of a civilian, can obtain a commission for less than £1,000.

Entrance through a military college is the most approved way of entering the army, but there is an easier way which must not be forgotten: that is, through the Militia. Very frequently in these days young men who do not care for the military colleges, or who have failed in their examinations, simply enlist, join a militia corps, cram privately, and work hard, then go up for examination, and try to gain their commission by these means. Success in this way is quite possible, but it is not as convenient as the other, and it requires much industry and determination. The Militia qualifying examination is not competitive, and the final examination is very much the same as that which is prescribed by the military colleges.

As to the conditions of ordinary enlistment, a recruit may enlist for any regiment of cavalry or infantry for which the recruiter to whom he offers himself is authorised to raise men. Or a recruit may enlist for general service in the cavalry or infantry, in which case he will be appointed to a cavalry or infantry regiment, but will be liable to be transferred within three months. With exceptions for special cases, the term of service in the army is Long Service, 12 years; Short Service, 7 years Army and 5 years Reserve, which will be converted into 8 years Army and 4 years Reserve Service if the period of Army service expires while the man is serving abroad.

In case of war, soldiers will be liable to be retained for an additional year after the expiration of their full period of engagement.

The prospects of the military profession are not easily stated. The pay given varies very much in different regiments, and the officers of Artillery and Engineers receive much higher pay than do the Infantry. Promotion is by selection, and an officer who does his duty and displays ability is very likely to advance. It is stated on authority that the number of promotions to Commissioned, Warrant, and Non-commissioned ranks, and of appointments in the Military Departments open to soldiers, amount to over 35,000, or about one-sixth of the total strength of the army.

The daily rates of pay of the several ranks in the different arms of the service are as follows:—

Ranks.		s. d.	£ s. d.
Colonels	Rates varying from	18 0	to 1 6 0 per day.
Lieut.-Colonels . .	" " "	16 0	to 1 1 0 "
Majors	" " "	13 7	to 16 0 "
Captains	" " "	13 7	to 13 0 "
Lieutenants . . .	" " "	6 6	to 7 8 "
Reg. Sergt.-Majors	" " "	5 0	to 6 0 "
Bombardiers and			
2nd Corporals . .	" " "	1 9	to 2 5 "
Acting Bombardiers			
and Lance Corps.	" " "	1 3	to 2 1 "
Gunners	" " "	1 2½	to 1 4 "
Drivers	" " "	1 2½	to 1 4 "
Sappers and Pri-			
vates	" " "	1 0	to 1 9 "

In addition to these payments, various sums are granted as extra pay and allowances.

Amongst the advantages belonging to Army Service are "Deferred Pay" and Pensions. An addition of £3 a year is made to the daily pay of a soldier during the first twelve years of his Army Service, but the issue of this pay is deferred until he completes his Army Service. Soldiers who have completed twenty-one years' full service become entitled to a pension for life, varying from 1s. 1d. to 2s. 9d. a day; or, if Warrant Officers, from 3s. to 5s. per day.

If discharged on account of an injury sustained in the performance of his duty, a soldier is entitled to a pension, according to the circumstances in each case. If a soldier on the married establishment be killed in action, or die of wounds received in action, a gratuity of twelve months' pay is granted to his widow, should she not be awarded a pension by the Patriotic Fund Commissioners. A gratuity of four months' pay is allowed to each orphan child under sixteen years of age if the mother be also dead, and if the child be not awarded a compassionate allowance by the commissioners.

The Navy.—A seafaring life is so trying and difficult that no boy ought to enter it who has not a decided liking for it. Unfortunately, the choice has to be made when a boy is not old enough to know what a life of hardship means. This is probably the reason why so many men enter the navy, and regret it when it is too late to adopt any other career. Boys read stories of life at sea, and become enamoured with the idea of adventure, and so they make a mistake which cannot be recalled.

The age at which youths can enter the navy is altered from time to time. Usually cadets are entered between the ages of twelve and thirteen and a half. Before they are entered they have to pass an examination, and before they can go up for examination they have to secure a nomination from the First Lord of the Admiralty. It is understood that these nominations are rarely refused, unless there is a special reason why they should be. At

the same time, certain applications are sure to be regarded with greater favour than others. The sons of officers of the Army, the Navy, or the Marines, for example, who have been killed in action or who have died of wounds received in action, are almost sure to obtain a nomination.

It is generally found that nominations are given for three times as many candidates as there are vacancies to be filled. It is therefore very important that a great effort should be made to enable a boy to pass the preliminary examination. To this end many parents send their sons to a naval crammer, that they may be specially prepared. There are two examinations—a preliminary examination, and a final examination. Candidates who fail to pass the preliminary are not allowed a second trial. A candidate who passes the preliminary, but does not succeed in the final, may compete at the next examination, provided he be within the limit of age. Every candidate is also required to pass a medical examination. Examinations are held half-yearly, in June and November, and the appointments take place in the July and January following respectively.

After passing the examination and obtaining an appointment, naval cadets usually train in the *Britannia*, and they are allowed four terms, two in each year, to complete their course of study. The cost of this training varies from £90 to £120 a year, and fees have to be paid before the commencement of each term. On passing out of the *Britannia*, the candidate takes rank according to his position in the final examination. He is now a midshipman or subordinate officer, and the next step which he has to take is to enter a sea-going ship, that he may be further trained in the duties of his profession. His parents or guardians are required to provide an outfit for him, and they must also expect to support him for some time, until he gains a position as sub-lieutenant.

“By an Order in Council the following regulations are established for the promotion of commissioned officers of the navy. Midshipmen are required to serve five years as midshipmen or cadets on board some of Her Majesty's ships, to render them eligible to the rank and situation of lieutenant, and they must be nineteen years of age. To qualify an officer for sub-lieutenant, he must have served the time and passed the examination required to qualify for a lieutenantcy. No lieutenant can be promoted to the rank of commander, except for gallantry in action, until he has served four years as lieutenant, three of them at sea; and no commander to the rank of captain, except for gallantry in action, until he has served two years as commander, one of them at sea. Captains become

admirals in succession according to their seniority on the list, provided they shall have commanded four years in a rated ship during war, or six years during peace, or five years during war and peace combined.”

The following is a statement of pay given to officers of various ranks when afloat; it is taken from regulations liable to alteration:—Midshipmen, £31 per annum; Sub-Lieutenants, £91; Lieutenants, £182; Lieutenants of ten years' seniority, £219; Commanders, £365; Captains of different grades, from £400 to £600; Commodore, £1,095; Rear-Admiral, £1,095; Vice-Admiral, £1,460; Admiral, £1,825; Admiral of the Fleet, £2,190.

These salaries, it must be understood, are for officers afloat. Only a limited number of officers, however, can be afloat. The rest belong to the Naval Reserve, and they receive only half-pay. It is the great aim of naval officers to be on active service, but the active list is limited to the number in each rank which is deemed to be sufficient for the purposes of the Navy. By way of providing for a liberal flow of promotion, officers are required to retire at certain specified ages, or after non-service afloat, irrespective of age, for a given number of years. Retired pay is, however, accorded.

As regulations stand at present, admirals and vice-admirals are compulsorily retired at the age of sixty-five; rear-admirals at sixty, or if their flag has not been hoisted for ten years; captains at the age of fifty-five, “or at any age if seven years have elapsed since they last served;” sub-lieutenants at the age of forty.

As regards seamen of the Royal Navy, all boys of good character who are able to read and write, and who have the written consent of their parents and guardians, are eligible to enter the Royal Navy, provided they come up to a certain standard of height and chest measurement, and can pass a medical examination.

After signing certain forms, which are obtained from the recruiting officer, and after satisfying the authorities as to their fitness for the work, they sign an engagement to serve for a term of years from the age of eighteen. This term is stated in the handbills published from time to time. They then enter a training-ship, and are at once credited with the money to pay for clothing and bedding. The pay of a second-class boy is sixpence per day, and for good conduct such a boy can obtain an additional threepence per week. A first-class boy receives sevenpence per day. During training the diet is liberal, and some privileges are granted in the way of holidays and recreation. At the age of eighteen a boy becomes an ordinary seaman; from thence he passes,

as soon as qualified, to the rating of A.B., and can rise, as vacancies occur, to Leading Seaman, Second Class, First Class, and Chief Petty Officer, Warrant Officer, Chief Gunner, and Chief Boatswain. The pay is :—

Ranks.	Per Day.	
	s. d.	s. d.
Ordinary Seamen	1	3
A.B.	1	7 to 1 9
Leading Seaman	1	9 „ 1 11
Petty Officer, 2nd class	2	0 „ 2 2
Petty Officer, 1st class	2	2 „ 2 7
Chief Petty Officer	2	8 „ 3 4
Warrant Officer	5	6 „ 8 3
Chief Gunner and Boatswain	9	0

The pay is always given for seven days a week, and each officer, man, and boy is supplied with provisions. Medical attendance and medicine are also given free of charge.

An appointment to the coastguard can be obtained after about nine years' man's service in the navy, or at the age of twenty-seven. The remuneration in money is rather lower than in the navy, but the men live almost all the year on shore, and are provided with houses for themselves and families; they receive pensions, on completing the necessary service, on the navy scales, but need not retire till the age of fifty.

Every seaman of good character, if physically fit, can, if he chooses to do so, remain in the naval service or coastguard till the age of fifty. Good service for twenty-two years from the age of eighteen entitles a man to a pension, the amount of which varies, according to conduct and position, from £18 upwards. The average pension for men of all ranks is £31 a year. A petty officer can obtain up to about £54 a year, with twenty-two years' service, and a good deal more if he remains until the age of fifty. Various appointments in the Civil Service are specially kept for deserving men who serve their time for pension, with pay ranging up to 7s. per day.

Marines, or sea soldiers, are reckoned as part of the naval forces, though the names of the officers appear both in the Army and Navy Lists. They are subject to the military law when on shore, though afloat they are subject to the Naval Discipline Act. They are enlisted for twelve years, with permission to re-engage for nine more. After going through their military training, they are drafted to the several divisions. The standard for infantry and artillery, and the system of pay, equipment, pension, and divisional administration, are similar to those of the line Royal Artillery. Officers are obtained by open competition from the pass lists for entrance to the Military Academy, Woolwich, and the Royal Military College, Sandhurst.

The Merchant Naval Service.—When a boy desires to go to sea, his parents have to decide whether he shall join the navy and become the servant of the Government, or whether he shall enter the *Merchant Service* and become the servant of a firm of shipowners, who send vessels to various parts of the world for mercantile purposes. Each branch of the service has its advantages and disadvantages. It is generally acknowledged that better wages are given in the mercantile service for a time; yet the naval authorities say that in the navy the men have “better provisions, continuous employment, leave on full pay, are subject to less fatigue and exposure to the weather, are well taken care of in sickness, and are entitled to pensions after a certain term of service.” Undoubtedly it is the case that there is not very much prospect of advancement in the mercantile marine. Nevertheless, crowds of boys enter it yearly. It is to be noted that the regulations for entering the merchant service are not so stringent as are those of the navy. The different firms of shipowners have their own rules, and these vary somewhat, so that it is not possible to say exactly what steps must be taken to give a boy a start. Some shipowners require a large premium (and it must be acknowledged that the number of those who dispense with the premium is decreasing every year), and some make it a rule that only boys who have been trained in the *Worcester* shall be admitted to apprenticeship.

The *Worcester* is a vessel which has been placed at the disposal of a committee of shipowners by the Admiralty for the express purpose of training boys for sea, and there is no doubt that it is a great advantage for a boy to have belonged to it. In the training-ship a boy gets a thorough practical knowledge of the hard work of his profession, which is most valuable to him. He is taught practical seamanship, such as knotting, splicing, reefing, furling, the management of boats, swimming, and nautical astronomy. Here boys learn many things which it is not usual for regular apprentices to be taught, such as covering the masts with rigging and heaving the lead.

The terms of admission to the *Worcester* are 50 guineas per annum for cadets in the Upper School, from 13 to 15½ years of age, and in the Lower School, from 11 to 13 years of age, 45 guineas, payable half-yearly in advance, and 10 guineas per annum for uniform, medical attendance, &c. A number of articles have also to be provided by the relatives of the boys, a list of which, together with ample information, forms of application, terms of admission, &c., can be obtained from the Secretary, Thames Marine Officers' Training Ship Office, 72, Mark Lane, London. No boy is admitted who is

over fifteen and a half, and who cannot pass a simple examination in reading, writing, and arithmetic; and all applications for admission have to be made on a printed form.

On leaving the *Worcester*, boys are bound apprentice on board some vessel for four years. Usually ship-owners require a premium before a boy can be apprenticed, even though he has been trained; but the Board of Trade allows two years on the *Worcester* to count as one year's sea-service. A boy with the *Worcester* Board of Trade Certificate is sure to obtain

employment. When his apprenticeship has expired, he goes up for an examination under the control of the Board of Trade; and if well conducted and industrious, he becomes second mate, first mate, and captain.

Seamen intended for the merchant service are trained on ships set apart specially for them; but those only are received whose friends are quite unable to fit them out at their own expense. These boys are taught for several months, and then are sent to serve either in the Royal Navy or in the Merchant Service.

LIFE ASSURANCE.

EVERY man who undertakes the responsibility of marrying and becoming the father of a family ought to take some steps to provide for those who come after him, unless he is possessed of such means as make it morally certain that they will be cared for whether he lives or dies. For one who is in this happy position, there are hundreds and thousands who by the exercise of their trade or profession can only just make both ends meet, or by great care put by a little for a rainy day; and these are the people who feel most the benefit of effecting an early insurance on their lives. In fact, the payment of the insurance comes to be looked upon as part of the regular expenses, just as much as the house-rent and taxes, and all the while a sum of ready money is secured, which, if the bread-winner dies, will perhaps enable his widow to go into business, or to put her sons in a fair way of prospering by paying the fees which start them for the law, the medical or architectural professions, or in apprenticing them to a regular trade.

The words "insurance" and "assurance" are often employed interchangeably, and it is not at all unusual for the query to be raised as to whether the one or the other is correct. It may be taken in a general way that the term "assurance" is applied to life, and "insurance" to risks by fire, water, or other disasters.

Origin of Insurance.—It has frequently been observed that life assurance originated from the study of the laws of chance, as observed in the experience of the gambler. The individual is freed from risk by union with his fellow-men for mutual protection. The gambler may be said to take the single risk reckoning on the duration of his play. The man who has the opportunity of insuring his life, but who neglects doing so, is the real gambler, because he wilfully takes the single risk, and cannot reckon from hour to hour on the duration of his

career. There are traces in long-past ages of some kind of insurance, for they are alluded to in the Code of Justinian; and in the days when pilgrimage to the Holy Sepulchre was frequent, there was a rude system of insurance for not more than three years, inclusive of the journeys out and home. The idea of calculating chances and striking averages was, however, reserved for a much later period, and has grown in accuracy with the cultivation of the exact sciences. Life, though individually uncertain, is determined, with respect to a multitude, like everything else in nature, by fixed laws. Out of any large number of people at a particular age, the deaths during the year will be a certain number, and every age has its proportion. Out of 10,000 Englishmen at the age of fifty-two, the proportion who die annually is 150, and so forth.

Insurances for short given periods and for annuities, long preceded the notion of payments kept up throughout a lifetime to insure a fixed sum of money to be paid after the insurer's death to those who might survive him. The first serious step was taken towards this when a certain citizen of London, named John Grant, wrote some shrewd observations on bills of mortality in 1662. But a considerable section of mankind, especially those concerned with statesmanship, frowned on the idea, and in Holland it was legislated against, and in France formally condemned in the time of Louis Quatorze. Holland, however, found herself sadly in need of money to carry on the long war against France, and the great statesman (who died all too early for his country's weal), John de Witt, who was Grand Pensionary in 1671, persuaded the States General to grant life annuities as a means of raising funds. He was the first who ever essayed to fix the rates of payment according to the probabilities of life as shown by tables of mortality. The subject had considerable attraction for a

certain class of minds, and the example of a man at once so great and good as De Witt had a great deal of weight. The next step in an onward direction was reserved for an Englishman. Working on foreign data, Dr. Hally in 1693 calculated elaborate tables of probabilities based on the bills of mortality of the city of Breslau, and these calculations were confirmed by Sir Isaac Newton. The chief students of and writers on assurance during the eighteenth century were De Moivre, Simpson, and Dodson; but it was reserved for Dr. Price at its close to examine the Northampton bills of mortality, and base on them a series of calculations which were felt to be better suited to England than those founded on the conditions of mortality at Breslau. The Institute of Actuaries has also calculated a table for healthy males, which is very valuable. The Equitable, which was one of the early Assurance Societies, adopted the Northampton data, and based their operations on it. Mr. Joshua Milne, actuary to the "Sun" office, examined the Carlisle bills of mortality from 1779 to 1787, and deduced therefrom the Carlisle Table, which is now adopted by most Assurance Societies. What is called the columnar system of calculation was invented early in the present century by George Barret, of Petworth, and improved upon by Griffith Davies, while Mr. Babbage probably gave it the final touch of perfection.

Life Assurance as a Business.—Although the Mercers' Company started what is called a Widow's Fund in 1699, and a Society for the Assurance of Widows and Orphans in the following year, life assurance as a business cannot be said to have begun till 1706, when the "Amicable" started into existence as a perpetual assurance office. Its mode of doing business was as follows:—Two thousand members were admitted, none of whom could hold more than three shares each. Their ages were limited from twelve to forty-five, and all paid or were paid for at one and the same rate. The charge for admission and entrance money came to £7 10s., and the payment was 10s. per month, with the addition of 1s. per quarter for expenses. A fixed dividend of £1 per share was allotted all round annually before going to work at the regular dividend, which was paid once a year, and was dependent on the amount of claims throughout the past year. This part of the proceedings was of course a lottery pure and simple, and assurance methods of this kind were speedily eradicated.

Guarantees of Safety.—It may be roughly taken that the length of time an assurance society has been started is a safe guide to its stability.

Another very important point is that the amount of the reserve fund should be large, and the working expenses strictly supervised, so that they should be efficient, but not extravagant. Scandals have arisen from time to time, and societies have come to grief on account of "expenses" being enormous and investments unwise, while incorrect balance-sheets have been prepared which looked well on paper and kept up the faith of the public, but merely postponed the crash. The modern system of placing the books once or twice a year in the hands of professional accountants who are perfectly independent, goes far to remove or mitigate dangers of this kind. Three methods have been suggested by experts and actuaries as the basis of a just and equitable computation of the expense ratios of all insurance companies, with the exception of what are called industrial offices. The first is the actual cost per cent. on life premium income; the second is the expense ratio on renewals, after allowing 100 per cent. for new business; and the third is the expense ratio on new premiums, after allowing $7\frac{1}{2}$ per cent. for renewals. There are other important elements to be taken into consideration, such as the single premiums included by some companies, commuted commissions, the differences in the premiums charged, and the frequent fluctuations in new business caused by special circumstances.

Effect of Occupation on Life.—Some very curious things have been discovered in the course of computations for life assurance, and among others the influence of different trades on the longevity of those who follow them. Statistics show that farmers have the best chance of long life, and that miners come next, in spite of the dangerous nature of their work. After them follow bakers and butchers, the trade of innkeeper being the least healthy. Mr. John Finlaison, actuary to the Commissioners of the National Debt in 1829, discovered that in a general way women's lives were better from the Assurance Companies' point of view than men's. This is to a great extent because women's occupations are of a different kind. They have now usurped the places of men to some extent, but they are neither soldiers nor sailors, and therefore not exposed to the risks of battle or to those of shipwreck.

Different Classes of Companies.—It may broadly be said that life assurance offices are of two kinds. Firstly, we have joint stock companies, which have a large subscribed capital, and undertake risks on lives, looking to make certain profits on the transactions. The rates in these are usually moderate, and the insurer has the security derived from a subscribed capital and the credit of the

shareholders. The second class are the mutual offices, in which the payments of the insurers make a common fund, out of which the heirs of deceased members are paid. In these the direct rates are higher, to allow for contingencies, but then any surplus that may remain over and above liabilities does not represent the profit of a private company, but belongs to the insurers, and can with their common consent be invested with very little excess on the ordinary office expenses. There are two ways of employing this surplus: one being the formation of a reserve or guarantee fund, which represents the same security as the paid-up capital of a company, and the other and by far larger part being divided at certain intervals among the members, who can either realise it as a sum in hand, as an addition to the lump sum to be received in future by their heirs, or in the form of deduction from their future annual payments. This is commonly called the bonus system. There are advantages in both systems, and hence companies very often have two scales of insurance, by the higher of which the insurer takes a share in the profits; while the mutual offices often offer a lower scale of premium without any share in the profits. Although annual payments suit most people, sometimes assurances are effected on the payment of a lump sum: as, for instance, a person thirty-six years of age may insure £1,000, and probably more if the society is fortunate in its business, on payment of from £420 to £450. Still another mode of securing a certain sum is paying a certain scale of premiums during ten, fifteen, or twenty years, and being thereafter free from payment. This seems peculiarly suitable to those who while in the prime of life make good incomes, which decline as they become less able to exert themselves. Then, again, there are companies established for the benefit of particular classes of society. Thus, total abstainers are supposed, upon the whole, to have "better lives," and have an assurance society of their own—The Alliance. The Society of Friends are likewise remarkable for longevity, and have a society of their own—The Friends' Provident—to which only Friends, or connections of Friends, are admissible. These societies, and some other special ones, offer advantages it is as well to secure by those eligible for them.

Preliminaries.—When a man proposes himself to an Assurance Society, certain questions are put to him, or handed him in print, respecting his own health and that of his family, and usually inquiries are made of two friends whose names he gives. He is also examined by a medical man on behalf of the society or company, and, as we all know, doctors differ. The doctor attached to one society may

reject a life which another will consider mere ordinary risk, and very few difficulties of this kind are now raised. Indeed, there is a method and rate of insuring invalid lives. In former days insured persons were restricted to travelling within a certain area; but now that locomotion is so easy, and every reasonable precaution is taken to ensure the safety of travellers, the assurance companies have very much lightened their restrictions.

Policies.—Policies are bonds on stamped paper in which the company or society, by its directors or members, binds itself to make good the sum assured at the decease of the person who insures, provided that death is not caused by deliberate and intentional suicide, or in a duel, or by the hand of justice, and also providing that the payments or premiums have been made.

A wife may insure the life of her husband, a husband may insure the life of his wife, a creditor may insure the life of his debtor; but the consent of the person assured must in each case be obtained. A person about to effect an insurance on his life or property must answer every question proposed to him with accuracy; any *wilful* false representation makes the policy void. In the absence of any condition to the contrary, a policy is not made void by the suicide of the assured in a state of insanity. When any one lends money on the security of a policy of insurance, the lender should have the custody of the policy, and give immediate notice to the insurance office that the loan has been made and the policy assigned.

Premiums ought, of course, to be paid regularly, but thirty days of grace are allowed. Many offices give notice when premiums fall due, but they are not bound to do so. If, however, a policy is forfeited by non-payment of premium, it is usually renewable after the lapse of three months on payment of a fine; and if a policy is voluntarily surrendered, a certain proportion of what has already been paid up is returned, according to a table of "surrender values." When assured by a single payment or lump sum, the policy is at once as good as a bank-note for a sum of money not much less than was paid for it; and even when the policy is secured by annual payments, it gradually becomes more valuable in proportion to those payments. Many offices are glad to make loans at moderate interest upon their own policies to a certain amount.

Children's Endowments.—Parents and guardians sometimes wish to insure a sum of money for a child at a certain age, perhaps when a daughter is of marriageable age, or when a son has to be apprenticed to a trade or profession. For instance, a clergyman with a fairly good living, but no other means, and a

family of three little girls, aged respectively two, five, and nine, wishes to ensure £100 for each when she attains the age of eighteen. For the youngest he will have to make sixteen annual payments of £1 16s. 6d. each; for the second, thirteen annual payments of £6 4s. 3d. each; and for the eldest, nine annual payments of £9 12s. 10d. each. This is a real ease which has recently been arranged. The importance of this mode of assurance is that it enables persons to invest small sums of money at compound interest, which is almost impracticable in any other way. Should the child, however, die on whose life this Endowment Policy has been effected before attaining the age selected, all the premiums paid will be returned without any deduction; or if payment of the premium is discontinued at any time after two years have been paid, a free or paid-up policy will be granted for a sum of money in exact proportion to the number of premiums paid, or a liberal cash surrender is granted. This is simply an outline of one scheme; many offices offer similar ones.

Annuities.—Granting annuities is a distinct branch of business, and is chiefly adapted for persons who are in a position to sink a certain lump sum in exchange for a fixed annual income—a much larger one than they could procure from any equally safe investment. The amount depends on the life of the assured, and an old person can obtain a much larger income than a young one, and a man a somewhat better annuity than a woman, females having a better expectation of life. It is possible for a man to buy an annuity for himself alone, or for himself and his wife conjointly, in which case the survivor enjoys the income; or he may purchase an annuity for his wife after his death; or he may pay an annual sum for a fixed number of years, at the expiration of which his annuity will commence. This last is called a deferred annuity. Annuity-takers are often said to be uncommonly long-lived, and very probably their freedom from anxiety as to ways and means induces peace of mind and a pleasant calm, which really is conducive to longevity.

Guarantee Insurance.—Those who hold situations of trust are often required to insure themselves, and a special class of company has consequently sprung into existence. The calculation is that out of a large number of persons of previously good character a certain amount of defalcation will arise, and the choice is between asking a person in a responsible position to get a couple of friends to guarantee him who would perhaps be ruined if he proved untrustworthy, and transferring the risk to a company, and extinguishing all risk in the case of

the employer. It is considered as a case well proved that these societies have raised the standard of commercial morality instead of lowering it.

Long-Established Societies.—A few of the oldest societies are the “Royal Exchange,” which was incorporated by Royal Charter in 1720, and is now in a position to say that since that time it has paid over thirty-five millions away in claims, and that its accumulated funds now amount to £4,000,000. The “Atlas” and the “Norwich Union” date from 1808, and the “Scottish Widows” from 1815. The “Equitable,” a society that was early fortunate in its investments, started in 1762. The “Friends’ Provident Institution” was established in 1832, while the “Clergy Mutual” dates from 1849, and the “Birkbeck,” a society with many ramifications, and particularly suitable for artisans, from 1852. These are only a few out of many, and for detailed information about all, there is no book equal to Bourne’s “Handy Assurance Manual.”

Post Office Insurance.—The Post Office Handbook, price 1d., gives full particulars about the insurance that may be effected through that medium, but for the benefit of those who cannot readily obtain one we quote a few of the leading rules:—

1. Any man or woman whose age is not less than 14 years or more than 65 can effect a Life Insurance for any sum not less than £5 or more than £100.
2. Husband and wife may each be insured to the full amount of £100.
3. Insurances may be effected by the payment of a lump sum once for all, or by the payment of annual premiums. The amount to be paid will depend on the amount insured, and on the age of the person insuring.
4. An Insurance may be effected on the life of a man or woman, payable—
 - (1) At death,
 - (2) On the attainment of the age of 60, or sooner if death occurs before that age is reached, and
 - (3) On the expiration of 10, 15, 20, 25, 30, 35, or 40 years, or sooner in the event of death.

The following examples show various ways in which Insurances may be effected:—

The life of a male or female between 21 and 22 years of age may be insured for £10—

	£	s.	d.
By an annual payment throughout life of	0	4	4
or,			(1d. a week.)
By an annual payment to the age of 60 of	0	4	8
or,			
By a single payment of	4	4	0

5. A person wishing to insure his life in the Post Office will be required to fill up a simple Proposal Form, which can be obtained at any Post Office Savings’ Bank, and sign it in the presence of an officer of the Post Office, who will send the proposal to the Controller of the Post Office Savings’ Bank. The Insurance Policy will then be forwarded in due course to the applicant, provided the premium has been paid and his life has been accepted by the Postmaster-General.

6. The payments for Life Insurance are made through the Post Office Savings' Bank, and are accepted in addition to ordinary deposits and to deposits for immediate investment in Government Stock. If the person insuring his life is not already a depositor in the Post Office Savings' Bank an account will be opened for him in that bank in the same manner as in the case of an ordinary depositor. Although the Life Insurance Tables published by the Post Office show the annual premiums payable, it does not follow that these payments are to be made in one sum each year. Provision for the payments can be made by depositing in the Savings' Bank sums of not less than 1s., and by using the Penny Postage Stamp Saving Slips the provision can be made in sums of one penny at a time. So long as the Depositor has sufficient money saved in the Bank, the Insurance money will be deducted as it becomes due without the Depositor being troubled in the matter, and a notice will be sent to him as evidence that the payment has been made. If the money saved is not sufficient, the Depositor will be informed accordingly, so that he may make a deposit covering the amount required.

A medical certificate is not requisite for an insurance of £25.

Friendly Societies.—Friendly Societies and Benefit Clubs have branches which really take the part of assurances to the members, who can thus lay by for the inevitable rainy day by very small degrees, but they scarcely come within the scope of this article.

Assurance against Accidents.—Any one purchasing a railway ticket can supplement it at very small cost by an insurance ticket procurable at the same place, and thus not only is a lump sum receivable in case of serious accident, but when temporarily disabled compensation is made for loss of time and expenses. People who habitually go on long journeys, such as commercial travellers, &c., ought never to neglect taking insurance tickets, for there is just as much a fixed law with regard to accidents as there is respecting the normal duration of life. Accidents of all kinds can also be insured against by an annual payment.

NERVOUS DISORDERS.

Hysteria or Hysterics.—At one time hysteria was supposed to be a disease limited to women, but of late years it has been shown that men often suffer as well. The term "hysteria" is used vaguely, and it would be difficult to say what meaning is usually attached to the word "hysterical." Speaking roughly, it may be said that the most common predisposing cause of the disease, is the existence of that peculiar condition of the nervous system which predominates in the majority of the female sex. Women who are more or less hysterical are met with at every turn, whilst the existence of a well-marked example of the disease in a man is a rarity. It was at one time supposed that "hysteria" had some connection with affections of the womb, but this theory has long been exploded. The complaint occurs most frequently in women between the ages of sixteen and twenty; but after that its occurrence is comparatively rare, although a few examples may be met with in women approaching their fiftieth year. What induces this peculiar condition, it is difficult to say; but in many instances it is associated with an irregular mode of life, want of occupation, and excessive novel-reading. Married women who have the care of a family, rarely suffer from it; in fact, the majority of them are too busy with their domestic duties to pay much attention to their own feelings and ailments. Hereditary taint is not without its influence, and the existence of an unstable nervous condition in the father, may predispose to the development of hysteria in the children, unless they should have the good fortune

to be well brought up, and treated not only kindly, but with a firm hand.

A hysterical woman generally suffers from perverted and defective will-power. She is either very uncertain or is excessively obstinate, and declines to accept advice or to listen to reason. She talks volubly, and is usually full of complaints. She is "crotchety" and extremely difficult to get on with. Her intentions may be of the very best, but she is a subject of discord in the household, and the fact has to be recognised that she can never be depended on to do anything. She is profuse in her promises: but when the time comes, nothing is done. She is always promising to "make an effort," but, practically speaking, she depends entirely for will-power on others. As long as she has a home, and is well looked after, all goes smoothly, and her eccentricities are condoned; but when the pinch comes, and her active co-operation is needed, it is like trusting to a broken reed. She is fond of talking of her "bad luck" and "misfortunes," but does nothing to make things better. She is emotional, and, above all, egotistic. Her language, especially in describing her own sensations, is uniformly exaggerated, so that it is difficult to say what importance should be attached to it. She generally suffers from pains which are described as being "something too awful," or "agonising in the extreme;" but if her attention is momentarily distracted from the subject, she apparently forgets all about them.

Many hysterical women suffer from occasional fits

of "hysterics," but others never develop this particular form of the complaint. The following may be taken as a description of a bad attack of hysterics:—

"A patient is talking vehemently, often unreasonably, and is agitated in manner; she is crying or laughing, or both, and perhaps apologising for, or lamenting her weakness; friends are either scolding or condoling, and sometimes there is a combination of both modes of domestic treatment; some real or imaginary grievance is uppermost in the mind and the conversation, and it is not 'met' or removed by the endeavours of the friends. Suddenly the patient gives a scream, or makes a spluttering noise, appears to lose voluntary power and self-control; she falls down with snorting breathing, and a quasi-tonic contraction of the muscles of the extremities and the trunk. She makes hideous grimaces and outrageous noises, throws her limbs about in a disorderly manner; utters incoherent sentences, adopts histrionic attitudes; complains of her throat and stomach and breathing; appears exhausted or faint, and sometimes stupefied; occasionally she seems to lose her consciousness, and then, after a fit of 'crying,' to be 'herself again.' The whole paroxysm may last for a few moments only, but more commonly it is of much longer duration; a number of absurd gesticulations and irregular convulsive movements lasting from a few minutes to three or four hours, after which the patient seems worn out, and falls asleep."

These attacks are often the cause of the greatest anxiety to those who witness them for the first time; but if they recur often, the real nature is soon recognised, and they are allowed to take their course. In an attack of hysteria the following points, which serve to differentiate it from other and more serious complaints, will be noted:—

"There is rarely absolute, or sudden loss of consciousness; the patient does not fall in such manner as to hurt herself, or tear her clothes; there is somebody near who shall see the phenomenon; hysteric paroxysms do not occur during sleep, or when the patient is alone; there is something artistic in the mode of their approach—the hysteric patient gathers her robe around her and falls gracefully; she appears to the casual observer to be unconscious, but there is not real or absolute loss of sense or of perception; there is not the hideous distortion of feature observed in epilepsy, nor is there the dilatation of the pupil; the eyelids may quiver, and the eyeballs may be turned up; but there is no divergent strabismus, nor is there the wide-open eye. Examined carefully, the physician may observe that the patient not only sees, but looks; the eyes are often definitely turned towards objects or persons

standing near, and then rolled up again towards the forehead; there is no bitten tongue, although there may be much foaming and spluttering with the mouth; the breathing is tumultuous and noisy, but there is no such absolute arrest of respiration as to cause asphyxia; and the irregular movements and noises that accompany the laboured breathing may often be seen to be occasioned by the lips; the attacks last for an indefinite time, are followed by much apparent exhaustion, but not by real stupor."

There is very little chance of confounding hysteria with apoplexy, but it is in some rare cases difficult to distinguish from epilepsy—in fact, in some cases the two complaints coëxist. In true epilepsy the seizure is quite sudden, the patient is absolutely insensible, the arms and legs and face are convulsed, and the fit is followed, not by sighing and sobbing, but by deep sleep or even stupor, lasting perhaps for many hours. The whole circumstances will have to be taken into consideration in forming an opinion, and the age and sex of the patient are often useful as a criterion.

Hysteria is a difficult disease to cure, but on the other hand it rarely or never terminates fatally. In childhood, systematic education and encouragement in habits of self-control might have done much; but when once the disease is thoroughly developed, the efforts both of friends and physicians too often prove unavailing. Medicines are not taken, instructions are not carried out, and by hook or by crook the patient, until the day of her death, manages to get her own way, and follow her own inclinations, to the disregard of the comfort and well-being of others. Something may of course be done by attention to diet, exercise, rest, and recreation; but although it is easy to lay down rules, the fact has to be recognised that they are rarely carried out. The patient promises anything and everything—and does nothing. She is generally fond of indigestible articles of food, and often apparently prefers slate pencil or cotton, to a more nutritious dietary. She should, if possible, be made to take food like other people—that is to say, she should have regular meals, and be made to eat the ordinary allowance of beef or mutton, or whatever may be on the table. Then she should not be allowed to have her breakfast in bed, or to indulge in late suppers, but should be forced to take her meals at the ordinary times and with the rest of the family. Her eccentricities and peculiarities should be disregarded, and she should be taught the virtue of punctuality. She should not be allowed to sit about with her hands before her, but should be given some definite occupation to keep her employed the greater part of the day. To find an occupation for a hysterical woman is no easy matter, but an effort should be made; and if nothing better offers, she

should be sent away from home to a place of business. In addition to her work, she should have a fair allowance of recreation; and if she can be made to go in heartily for some outdoor exercise, such as lawn tennis, her condition, both mental and physical, will soon undergo a change for the better.

In connection with the treatment of these cases, it is well-nigh useless to speak of purely medicinal remedies. Such drugs as bromide of potassium, asafoetida, sal-volatile, and chloric ether, may exert some temporary benefit, but they will soon be discarded as practically useless.

Of late years a mode of treatment has been introduced which frequently yields good results—and that is Massage. Ordinary simple Massago is of little avail, and the patient will have to be removed from her friends and domestic relations, and “isolated.” That means that she will have to be sent to some house, or home, or institution—it matters little what it is called—where she will be rationally treated, and not allowed to have her own way and do exactly as she pleases. Her meals will be placed before her, and she will be required to take them whether she likes it or not. She will be treated kindly, but firmly; and she will be under much the same conditions as regards her surroundings as a boy at a public school. She will be made to feel that she is simply one of a number, and that her will is not law. The duration of the treatment will depend very much on herself. If she will only try and get well, she will soon be able to go out; but if she is persistently obstinate, she will have to remain under treatment for weeks, or perhaps months—at all events, until some improvement is effected. Cases of hysteria have to be treated with as much care as cases of insanity, in the category of which they may without exaggeration be placed. It is better to initiate some radical mode of treatment at the beginning, than to allow matters to drift on year after year, without attempting to remedy the unfortunate condition of affairs.

Hypochondriasis.—This is the condition which in men corresponds to hysteria in women. It is, possibly, a disease of the nervous system, but very little is known about it. It probably answers to the “spleen” or “vapours” of ancient writers, who ascribed it to the presence of “black bile.” The most important feature of the complaint is that without any sufficient reason, and without any sign of intellectual insanity, the sufferer is observed to concentrate his attention on some particular organ of the body, and to fancy that it is seriously diseased. This concentration of attention is usually accompanied by great depression of spirits, which may be ascribed to flatulence or indigestion. The temper

becomes irritable, and a gnawing or burning sensation may be experienced at the pit of the stomach. In the case of patients in whom there is some hereditary taint of insanity, there may be distinct delusions.

The treatment of this condition is by no means easy. The first thing is to endeavour to induce the hypochondriac to forget his woes; but this is by no means easy, as it is probable that his sufferings are far from being unreal. The great thing is to break down the patient's self-concentration, and to get him to take a rational interest in the affairs of every-day life. It has been very truly said that “it would be a real good fortune to a hypochondriac if he could fall in love in a natural and healthy manner, or if he could interest himself warmly in philanthropic schemes or other plans of public usefulness.”

The general condition of the health should be improved as much as possible by taking plenty of exercise in the open air, and by a judicious selection of food. Drugs may do some good, but it is a mistake to rely on them implicitly. Cod-liver oil will improve the general nutrition, and Fellows' Syrup of the Hypophosphites will act as a general tonic.

Giddiness.—Giddiness, or vertigo, may be defined as the sensation of moving, or the appearance of moving objects without any real existence of movement. The cases may be divided roughly into two categories, the vertigo presenting two distinct forms. In one the patient himself feels as if he were moving, whilst in the other everything about him seems to be in motion. Not uncommonly the sufferer feels as if the pavement were undulating or vibrating; or the pattern of the paper, or the various articles of furniture, may seem to chase each other round and round in the most distressing fashion. This is due in the majority of cases to disordered circulation in the brain, the blood being unequally distributed. It is often associated with other phenomena, such as disordered vision, or curious noises in the ears. The exciting cause is frequently some derangement of the digestive organs, a form usually known as gastric vertigo. It may occur soon after a meal, but is quite as common when the stomach is empty, and the patient is exhausted. It is sometimes caused by the accumulation of wax in the ears, or by some other derangement of the auditory apparatus. Another form is the nervous vertigo, which attacks people who for some reason are below par, or who have overtaxed their nervous energies. It may be the result of inordinate indulgence in alcohol, tobacco, or even tea. Giddiness sometimes constitutes one of the phenomena of migraine or sick headache, being, in fact, a constant accompaniment of the attacks. Sometimes, too, it may occur as a symptom of suppressed

gout, the patient, instead of getting pain and swelling in the big toe, suffering for some days from persistent giddiness. It may also be the forerunner of epilepsy, or may mark the onset of some serious organic disease.

The treatment of these cases will depend very much on the exciting or predisposing cause, for vertigo is in reality not a disease in itself, but a symptom of many diseases. Should it be persistent, it will be necessary to consult a medical man, so that its exact nature may be ascertained. In slight cases there will be no harm done in getting the bowels freely opened, and this can be accomplished by taking five grains of blue-pill at bedtime, followed up with a seidlitz powder in the morning. Should this fail, it may be well to try and improve the condition of the digestive organs, and a draught may be taken before meals containing fifteen grains of bicarbonate of soda, ten drops of chloric ether, and an ounce of infusion of calumba. The ears should be thoroughly syringed with plenty of tepid water and soap, so as to remove any accumulation of wax. This may be followed by the administration of three five-grain tabloids of bromide of potassium three times a day after meals. The diet should be carefully regulated; alcohol, tea, and tobacco should be avoided, and the patient should observe the greatest regularity with respect to his meals. These simple measures often effect a cure; but should the symptoms persist, there is no help for it but to seek skilled medical advice. Giddiness is far too serious a matter to be neglected, and the sooner it is set right the better.

Sleeplessness.—The amount of sleep required by different individuals, and at different periods of life, varies much. An infant, for example, may sleep with advantage almost all day and all night—certainly twenty hours out of the twenty-four. A growing lad, taking plenty of exercise, rarely finds nine or ten hours too much. From fifteen to twenty-five, eight hours is the usual allowance, but during middle life seven hours is ample. After fifty some people manage well with only six hours' sleep, but this is barely sufficient. There are idiosyncrasies with regard to sleep, and many active workers rarely get more than five hours, and seem none the worse for it. Some people seem to sleep faster than others—that is, their recuperative power after prolonged fatigue is greater. There are people who sleep very little more than four hours out of the twenty-four during the week, but who get a long rest on Sunday, remaining in bed perhaps ten or twelve hours.

Many people have great difficulty in getting to sleep, whilst others are sound asleep almost as soon as they close their eyes. From long habit many

people, especially those advanced in life, sleep well only in their own particular bed; whilst others can sleep anywhere—in an arm-chair, on the floor, or in a railway train. The power of going to sleep quickly can undoubtedly be cultivated, and those who have but little time to rest soon learn to make the most of it.

Sleeplessness is of two kinds: there may be deficiency in quantity or duration of sleep, or the quality may be indifferent, the patient suffering from disturbed and broken rest. These two conditions not infrequently co-exist, the sufferer experiencing great difficulty in getting to sleep, and when sleep comes, sleeping badly.

Sleeplessness arises from many causes, one of the most frequent being mental anxiety. When a man is worried, he rarely sleeps well, and his sleep is disturbed by dreams of all kinds. This is a condition of which overworked business men frequently complain. Unusual mental exertion is another common cause, and this is not uncommonly met with in novelists, playwrights, and journalists who work far into the night. Dyspepsia in its manifold forms has much to answer for as a sleep preventer; and a late supper, or an unusually heavy dinner, will keep many people awake the greater part of the night. On the other hand, some people never sleep well unless they have something to eat—a light meal usually—an hour or two before retiring to rest.

In the treatment of sleeplessness the first thing is to endeavour to correct any error in the mode of life of the sufferer. Care should be taken to see that the bedroom is of sufficient size, and that the ventilation is not defective. A cold damp room is inimical to sleep, and most people sleep all the better with a fair allowance of bed-covering. As a rule it is better to sleep on a spring mattress than on a feather bed. Many people sleep best alone, but others—ladies and young people, for example—get nervous if left alone at night, and never sleep so well as when they have a companion, either in the same or an adjacent room. It is hopeless to expect a good night's rest unless exercise is taken during the day. Work means rest, and rest is impossible without work. Many people never sleep well unless they get a good walk in the evening, sufficient to produce a certain amount of bodily fatigue. A glass of stout or a cup of beef-tea taken the very last thing, will send many people to sleep to a certainty.

There are many drugs which act as nervous sedatives and favour sleep, but it is best to try and do without them if possible. One of the best and least injurious is bromide of potassium, two of the five-grain tabloids being taken the very last thing. Opium, morphine, and chloral should be used only under the advice of a medical man, as a craving for

these powerful narcotics is soon established, and it is no easy matter to break through the habit of taking them if once acquired.

In connection with the subject of sleeplessness, it may be mentioned that many people suffer from the converse condition, and are perpetually drowsy. This is often due to general weakness and debility, or it may result from an inactive condition of the liver. The best remedy is exercise in the open air. The rule should be to go to bed early and get up early. People who have no definite occupation, nothing to make them exert themselves, are very frequently indolent and apathetic, and are apt to sleep too long and too heavily. If by chance one of these individuals should happen to become involved in a lawsuit affecting his interests, he soon finds that his hours of sleep are naturally curtailed, and the same effect follows only too surely should he fall in love, and find his affection unrequited.

Young ladies occasionally fall into a condition of persistent sleep, to which the term *Catalepsy* has been applied. It is not a natural sleep, for the patient talks and walks about, and even takes food, although she may be practically oblivious to all that is passing around her. This peculiar condition is allied to hypnotism, or mesmeric trance, and requires very careful treatment.

All disorders of sleep are serious, for nothing so quickly and so completely undermines the health as inability to rest at night.

Somnambulism.—Somnambulism, or sleep-walking, is of common occurrence in children, and is sometimes met with in adults. It can hardly be regarded as a disease, but may be taken as the indication of the existence of an over-active nervous system. It is sometimes hereditary, and it often happens that several members of the same family suffer from it. It is a source of danger to the sufferer, and of inconvenience to other people from the fright it gives them. It is occasionally associated with catalepsy, and even with epilepsy. Children who are sleep-walkers often wet the bed, and these two conditions may alternate.

The treatment of somnambulism must be guided by common-sense principles. If the sufferer is a boy at school, he must be removed from the company of those who for amusement would perhaps foster the habit. The somnambulist should not be allowed to sleep in a room by himself, and the doors and windows should be carefully secured so as to avoid the possibility of his getting about at night and running into danger. Feather beds should be abolished, and a good hard mattress should be obtained. A cup of beef-tea, or a little milk and soda-water with a biscuit, may be taken at bedtime, but anything in the

shape of supper should be forbidden. When the patient becomes restless at night, or begins to talk in his sleep, he should be gently roused and made to turn over, or assume a more comfortable position. The head should be high, well supported by pillows, and the bed-clothes should be light. The general health should be improved by the judicious administration of tonics, whilst plenty of outdoor exercise should be taken. The hours of study should be restricted, and healthful recreation and amusement should be the order of the day.

Of medicinal remedies there is only one on which much reliance can be placed, and that is bromide of potassium. Two five-grain tablets taken at bedtime with a little water will do more than anything to quiet the nervous system. Somnambulism even in its most pronounced form rarely lasts long, and children as they get older grow out of the habit of sleep-walking.

St. Vitus's Dance.—Chorea, the St. Vitus's Dance of this country, the St. Weiz of Germany, and the dance of St. Guy of France, is a disease of the nervous system, characterised by a succession of irregular involuntary movements occurring in almost every part of the body. It is met with most commonly in children, but is also seen in adults. Girls as a rule suffer from it more frequently than boys. It is associated in some ill-defined way with rheumatism, and often with heart disease.

It frequently comes on suddenly, sometimes without any defined cause, sometimes as the result of a fright. It often commences on one side of the body, or perhaps a little irregular twitching about the face may be the first indication of its onset. The child is noticed to be clumsy, has a difficulty in handling the knife and fork, or breaks things in an unaccountable manner. The limbs are always on the move, and yet there is complete absence of pain, and no sense of tiredness or cramp. The movements cease during sleep, and may be controlled by a powerful exertion of the will, but they are intensified when attention is drawn to them. After a time the mental condition suffers, and the patient takes no interest in anything.

The usual duration of chorea is about two months, but should it persist beyond this time it may continue almost indefinitely. There is a tendency to spontaneous recovery, but, on the other hand, relapses are not uncommon. It is very rarely fatal, but it may give rise to serious inconvenience by preventing the child from attending school. It is always a much more serious complaint in adults than in children. It requires most careful treatment when it supervenes on acute rheumatism or scarlet fever.

Although in some instances not a serious disease.

the attendance of a doctor is desirable, and it is especially important to ascertain if the heart is in any way affected.

As a rule children with chorea are not confined to bed, but they should never be allowed to go to school when suffering from it, as it spreads by imitation, and is apt to assume an epidemic form. One child suffering from chorea in a school may suffice to start similar movements in the other children, which cannot be distinguished from the disease itself. Many authorities consider that it is essentially a complaint of school life, and that over-work and over-education have much to answer for in its production. It is an undoubted fact that boys who are promising scholars in our Board Schools frequently break down from this particular cause. Education rarely or never does any harm if the body is well nourished and a fair amount of exercise is taken; but when the home comforts are few, and the amount of food is small and of bad quality, the nervous system is apt to give way.

The treatment should consist chiefly of rest, and to ensure this the patient should be confined to bed in a well-lighted and well-ventilated room. The food should be abundant and varied in quality. Most patients in hospitals get well without any medicinal treatment, but in some cases undoubtedly drugs are useful. When the child is pale and anæmic, iron is of service, and is best administered in the form of iron wine, made with equal parts of sherry and malaga, a teaspoonful or more being taken in a little water three times a day after meals. Many doctors pin their faith to arsenic; but this is an active remedy, which should be given to children only under medical advice.

Of late years many cases of chorea have been treated with success by means of Massage; and when it is carried out under medical supervision, it undoubtedly very often affords good results. Musical gymnastics—*i.e.*, movements timed to music—have many advocates in the treatment of this disease. Other authorities rely on baths, and state that the tepid shower-bath once or twice a week does more good than anything, especially when the case is of long duration and threatens to prove intractable.

Stammering.—The term “stammering,” taken in its broadest sense, includes many different forms of defective articulation, such as the inability to pronounce certain words or letters, the tendency to hesitate or stumble whilst speaking; and the habit of interjecting meaningless sounds in the pauses of conversation. In a more limited sense stammering may be taken as being synonymous with stuttering, and implies a spasmodic condition of the organs of speech, in virtue of which enunciation becomes

defective, there being very commonly a repetition in rapid sequence of some particular word or sound.

Stammering is often hereditary, but in other cases it is acquired and may be purely imitative. It rarely shows itself before the age of four or five, but it may originate at any age. It sometimes follows some acute illness, such as scarlet fever or small-pox. Men suffer from it more than women, who rarely experience any difficulty in giving utterance to their thoughts. The hesitation is often experienced only in connection with the explosive consonants *b*, *p*, *d*, *t*, and the hard *g* and *k*, but sometimes it is noticed in words commencing with the continuous consonants *v*, *f*, *th*, *z*, *s*, and some others. Stammering is usually due to spasm of some portion of the mechanism involved in the formation or utterance of speech. Its degree varies much, there being sometimes only a little, almost imperceptible, hesitancy, whilst in more marked cases the mouth remains open, the muscles of the face work convulsively, the veins become dilated, and the sufferer presents a truly pitiable appearance. The trouble is always intensified by anxiety or excitement, and the patient is usually most distressed when he is anxious about all things to create a favourable impression.

With respect to the treatment of this distressing affection, the first course to adopt is obviously to consult a doctor, with the view of determining whether there is any affection of the mouth or throat which might give rise to or intensify the condition. Then attention should be directed to the general health; and if it is found that there is poverty of the blood, or indigestion, or general weakness, these must be removed, when the following measures may be adopted:—The patient should be placed for at least six months under the care of a master of elocution who has made himself thoroughly *au fait* with the subject. The patient will be taught to adopt a slow and deliberate mode of utterance, and whenever the tendency to stammer occurs in connection with any letter, to check himself momentarily by a voluntary effort, and then to try again, rather than to struggle against the defect. He must be told not to speak when nervous or excited, but to wait till this condition has subsided. He will have to practise reading aloud, and lessons in singing will teach him how to take a breath and expand the chest properly. Clergymen and other public speakers often get over the difficulty by habitually intoning. Any treatment requires patience, and plenty of it; and the sufferer must not be disappointed or dispirited if even at the end of three months there should be apparently very little improvement.

Deafness.—There are few complaints more distressing than incurable deafness. Deafness itself

may occur from many causes—some very trivial, and others of a serious character. One of the most common causes is the accumulation of wax in the ear. This is best removed by the use of a syringe



Fig. 1.—EAR SYRINGE.

and a plentiful supply of soap-and-water. The shape of the syringe is not a matter of indifference, and the form figured in the accompanying woodcut will be found the most useful. (Fig. 1.) Made of brass, with finger-rings and an ivory pipe, it costs about eight shillings. A simpler form, made of vulcanite and without rings, may be obtained for six shillings. A good deal depends on the way in which it is employed. A bowl is needed to catch the water. This should not, however, be a large wash-basin, but a small bowl, about the size of a finger-glass, so that it can be easily held by the patient. If placed immediately under the ear, no towels or napkins will be needed, and there will be no risk of wetting the collar or dress. The patient should be comfortably seated, and the operator should pull up the ear so as to straighten the passage and admit the ingress of the fluid. The

nozzle should be inserted well into the canal, and the water should be injected slowly and steadily. If the operation is conducted properly, it will give neither shock nor pain. There is often a very great accumulation of wax, and it should, if possible, be all removed at one sitting. Both ears should be syringed, even when deafness is complained of only on one side. The hearing often improves at once, the relief being complete and permanent. It is not a bad plan to insert a piece of wool after the syringing, but it is not absolutely necessary. The patient should not attempt the operation himself, or he may push the nozzle too far, and effect some permanent injury. It is a simple procedure, but to be successful it requires to be done well. An attempt is often made

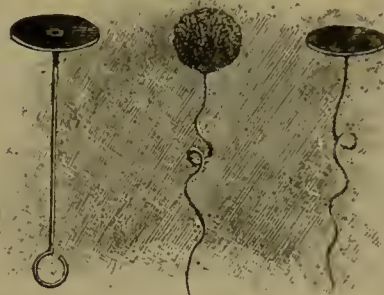


Fig. 2.—ARTIFICIAL TYMPANI.

to remove wax by dropping oil or glycerine into the ear, but it is rarely successful.

Another common cause of deafness is perforation or rupture of the membrane of the ear. This may be caused by blows on the head, by boxing the ears of children, by violently blowing the nose, by injudicious syringing, by the introduction of probes in the attempt to remove some foreign body, by going down in a diving-bell, and by loud noises, such as the discharge of cannon. It often follows scarlet fever, and is one of the most distressing possible consequences of that disease. People who in smoking can make the smoke come out of one or both ears have a hole in the drum. This hole can be distinctly seen on using a speculum with a good light, as shown in the accompanying sketch. (Fig. 2.) This condition is unfortunately not curable, but much may be done to remedy the inconvenience. The ear should be gently and carefully syringed by a surgeon, and then a little bit of cotton-wool moistened with oil is passed down to the drum to block up the hole. This wool will have to be removed from time to time, and the patient may be taught to insert and withdraw it himself. Artificial tympani to improve the hearing are sold by most instrument makers, and may be found useful. (Fig. 3.) They are gently passed down, by the silver wire attached, till the piece of membrane



Fig. 2.—EXAMINING THE EAR.

rests on and closes the aperture, the art of doing this being learnt by the patient. Sometimes a drop of glycerine placed in the ear temporarily closes the aperture, and so restores hearing.

When the deafness is due to catarrh of the throat, tabloids of chlorate of potassium and borax will be found most useful. When the disease is situated in the Eustachian tube, leading from the throat to the ear, a Verker Chloride of Ammonium Inhaler (Fig. 4 shows the manner of using the instrument as

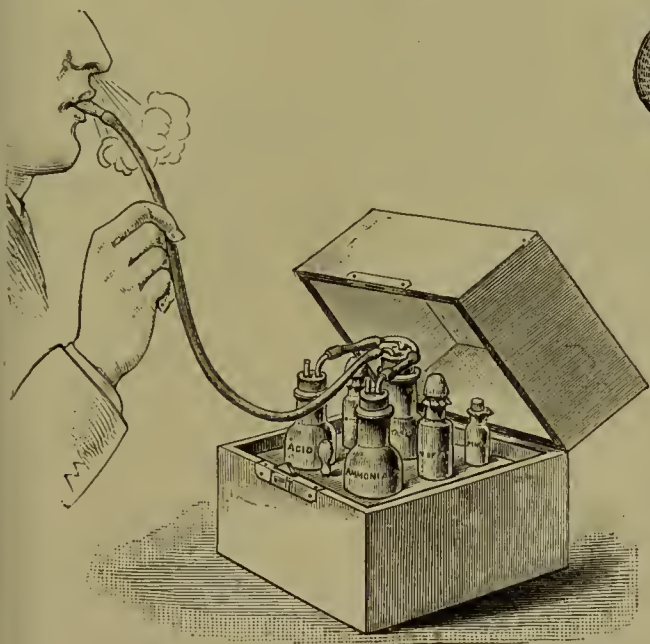


Fig. 4.—VERKER INHALER.

made by Burroughs and Welleome) often helps to remove the accumulated secretion. A few drops of oil of eucalypti should be dropped on a piece of absorbent cotton-wool and placed in the wash-bottle. The ordinary method of inhalation is shown in the illustration; but in this case the fumes should be forced into the ear by holding the nose and swallowing, after inhaling deeply.

Deafness is sometimes due to some defective condition of the nerve, and may be intensified by general debility or want of tone of the system. It will as a rule be found to be better in dry fine weather, and worse on damp foggy days. People suffering from this condition often hear better in a train, or in a crowded thoroughfare, than in a quiet room. The treatment of deafness due to nerve trouble is, it must be



Fig. 5.

confessed, not very satisfactory. In the majority of cases the unfortunate sufferer will have to be content to use a hearing trumpet, or conversational tube. A portable hearing trumpet made of gutta-percha

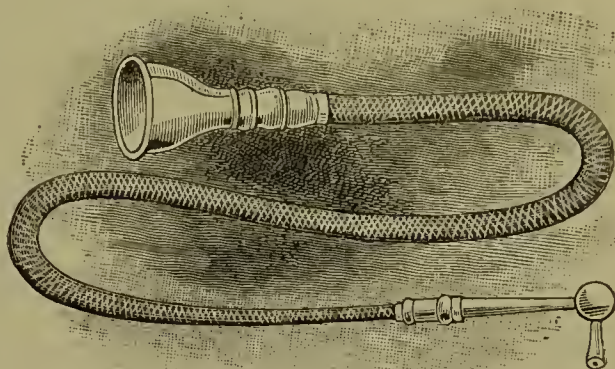


Fig. 6.—CONVERSATION TUBE.

(Fig. 5) can be obtained for three shillings, whilst a more elaborate instrument, nickel-plated, costs from £1 5s. to £2, according to the size. A flexible conversation tube (Fig. 6) with ivory mounts can be obtained for about two guineas. Ear-shells or ear-cornets (Fig. 7) are useful, and are usually fitted with an adjustable spring. The audiphone is a convenient instrument, and is of great utility and comfort to those whose hearing is not very acute. There are many ingenious instruments in use for the same purpose, one of the most popular being a lady's fan with a concealed hearing trumpet.

It must be admitted, however, that the simplest forms are the best.



Fig. 7.—EAR SHELLS.

It often happens that as the general health improves, the improvement is shared by the auditory apparatus. There will be no harm, at all events, in trying the effect of a course of phosphorus. A one-hundredth of a grain of phosphorus, made into a pilule, should be taken four times a day for a month; and should this not succeed, a teaspoonful of Fellows' Syrup of the Hypophosphites may be taken twice a day in a wine-glass of water for six weeks. Cod-liver oil, too, is a useful adjunct. The

patient should, however, endeavour to improve the general tone of his system by change of air and plenty of outdoor exercise. The improvement will at the best be but slow, and very little indeed can be done under two or three months of continuous medical treatment.

Some forms of deafness there are, due to disease of the internal apparatus of the ear; but these can only be treated satisfactorily by a medical man, as they require very great care in their management.

TABLE BEVERAGES AND COOLING DRINKS.

THERE is no question that drink, in some form or other, is no unimportant part of our daily food. It is a delicate subject upon which to touch, being one that people think, speak, and write very strongly about. We cannot discuss here whether or not the teetotalism of the present day is carried to extremes, but proceed at once to the practical consideration of the various drinks themselves. We will commence with the non-alcoholic drinks, the first of which is water.

Water.—One much-neglected beverage in this country, though undoubtedly the cheapest, is pure water. If teetotalers could educate the British public to grasp the fact that pure water, unadulterated by lime-juice, fruit syrups, &c., is *the* best drink in the world, they would do far more good than is done now by means of various advertised liquids, many of which are well known to contain alcohol. But to return to our subject of pure water. Of course purity is of the highest importance, but is not always obtainable. Many people delude themselves with the idea that all their drinking water is filtered. We can vouch for the accuracy of the following story, which is the more amusing, perhaps, as it happened in the house of a well-known physician attached to the staff of the Westminster Hospital, who himself, as well as the members of his family, were teetotalers. A filter had been fitted up in the cistern; and, consequently, there were two taps from which to draw the water for the household—ordinary water and filtered water. Not being satisfied with his water-supply, he filled two bottles, marking them A and B, and sent them to a well-known analyst for his report. The sample labelled A was reported to be very fairly wholesome drinking water; the sample labelled B was reported in a very foul condition, quite unfitted for drinking purposes. Unfortunately, the purest water was the ordinary water, and the water unfit for human consumption was the filtered water.

The moral of this story is—the neglected filter is a great deal worse than no filter at all. And, remember, this took place in the house of a London physician. What, then, is the use of trying to teach our London poor to have their water filtered? We do not mean to say that filtering water is wrong, but, on the contrary, consider it an absolute duty of the public to learn the real use of filters. We remember on one occasion taking the lid off a filter in a private house where there were many children, who drank nothing but water. (The subject is so important that we hope our readers will pardon old-fashioned Saxon English.) It stank like a cesspool. Where water is of doubtful purity, it can always be boiled, and then allowed to get cold. If afterwards it can be properly filtered, of course it would be better. But we cannot speak too strongly on the point of warning people who use filters, on the importance of having them properly cleansed. The manner of cleansing differs in various filters. Some require very frequent and vigorous scrubbing; in some the material has to be calcined; and there are other ways. But the foul material that gradually collects *must be got rid of* if the water is to be pure; and thorough instruction in the proper way of doing this should be obtained when the filter is purchased, and carried out afterwards with rigid regularity.

A very refreshing and simple drink is ordinary toast and water, especially when iced. Two or three slices of lemon may be added, and sometimes a few lumps of sugar. Toast and water is really a better drink with meat than any of the sweet compounds known as lime-juice cordials.

Mineral Waters.—Of all non-alcoholic drinks, in the opinion of many persons, there is nothing to equal the German seltzer-water, sold in little red pitchers. Then, of course, there is the almost infinite number of aerated waters. Those in bottles are very much to be preferred to those sold in

syphon bottles. But in speaking on this subject, we cannot quote a higher authority than Sir Henry Thompson, who speaks as follows:—"For those who can afford to buy water, no purer exists in any natural sources than that of our own Malvern springs, and these are aerated and provided in the form of soda and potash waters of unexceptionable quality. Pure water charged with gas does not keep so long as a water to which a little soda or potash is added; but for this purpose six to eight grains in each bottle suffices—a larger quantity is undesirable. All the great makers of these beverages have now their own artesian wells, or other equally trustworthy sources, so that English aerated waters are unrivalled in excellence. On the other hand, the foreign syphon, made, as it often is, at a chemist's shop, and from the water of the nearest source, is a very uncertain production. Probably our travelling fellow-countrymen owe their attacks of fever more to drinking water contaminated by sewage matter than to the malarious influences which pervade certain districts of Southern Europe. The only water safe for the traveller to drink is a natural mineral water, and such is now always procurable throughout Europe, except in very remote or unfrequented places. In the latter circumstance, no admixture of wine or spirits counteracts the poison in tainted water, and makes it safe to drink, as people often delight to believe; but the simple process of *boiling* it renders it perfectly harmless: and this result is readily attained in any locality by making weak tea, to be taken either hot or cold, or in making toast-water, barley-water, lemonade, &c. The table waters now so largely imported into this country from Germany and France contain a considerable portion of mineral matter in solution; and, while they are wholesome as regards freedom from organic impurities, are, of course, less perfect for daily use than absolutely pure waters, such as those above referred to. Vaunted frequently as possessing certain medicinal properties, *this very fact* ought to prohibit their constant use as dietetic agents for habitual consumption, as we do not require drugs for diet, but only as occasional correctives. Among them, the natural Selters, Apollinaris, Gieshübel, and St. Galmier—but of this latter some of the sources are inferior to others, the best appearing now to be chiefly retained for Paris—are perhaps among the most satisfactory within our reach. A dash of lemon-juice and a thin cutting of the peel form sometimes an agreeable addition; and nothing keeps the palate cleaner or in better order for appreciating food."

Sweet Drinks.—Sir Henry Thompson then proceeds to comment on the "fruity juices" and "sweet compounds" which have been of late years

"so inordinately puffed" as dinner drinks. We believe there has been a prize offered to anyone who will discover a really good dinner drink that will compete with bitter ale, but at present the prize remains unwon. One of the most agreeable of non-alcoholic drinks is that known as "Lemon squash," which consists of the juice of a fresh lemon and a bottle of soda-water, sweetened to taste. Of late years there has been a great rage for lime-juice, and rival manufacturers each proclaim their own make as the best. The best form of lime-juice is the genuine pure juice, the price of which is about 10d. per bottle retail, which means 8d. per bottle wholesale. The pure native lime-juice, however, does not keep good for long. It is unsweetened, and requires the addition of sugar, and the great mistake is to take it too strong. It is very nice indeed when fresh-bottled, but you cannot depend upon it when it has been bottled many months.

Cordials.—The above-mentioned pure lime-juice is the base of all the so-called cordials, and their name is legion. The additions and alterations made to the original base are almost endless in variety. One of the most absurd additions for a non-alcoholic drink, but one which is most undoubtedly very successful in improving the flavour, is rum. This is, indeed, a species of weak rum punch. Some may remember that in reply to a question addressed him by a well-known teetotal member of the House of Commons, the Chancellor of the Exchequer explained that a stop had been put to the sale of certain "teetotal" drinks on the grounds that they interfered with the revenue, some of them containing a larger proportion of alcohol than London porter; adding, with keen irony, that it had been found by experience that these teetotal drinks were popular in proportion to the amount of alcohol they contained. Some of the other additions to lime-juice, though they do not contain any alcohol, are yet in one respect drugs. Certain of the lime-juice cordials contain a considerable amount of iron. Now, iron may be, or may not be, a valuable medicine, but then it should be prescribed by a doctor, and not by a grocer. Of course all these cordials contain sugar. Then some contain spirits of ammonia, or, in other words, sal-volatile. This, of course, is an attempt to make a liquid into a stimulant which ought not to be a stimulant, and is consequently a deliberate fraud. Men and women would be far better to take a half-pint of honest bitter ale with their dinner, than to pretend to be teetotalers, and make up the deficiency with constant sips of sal-volatile, chloric ether, &c.

A very harmless addition to lime-juice is a flavouring of cocoa-nut, besides which various essences are used, such as oil of nutmeg, oil of cloves, caraway-

seeds, in addition to some light flavourings like capsicums, which, as we have said before, is sometimes used to give a fictitious strength to inferior whisky. It must not be supposed, however, that all lime-juice cordials, or even the majority, are mixed with deleterious matter. On the contrary, the great majority are pure, but the principal drawback to them as a dinner drink is that they are sweet.

Ginger Beer and Lemonade.—One of the best non-alcoholic drinks—if indeed it may be called such—is ginger beer, especially when it is brewed. When it is brewed, it can be kept in casks, and drawn from the cask like ordinary beer. The old-fashioned ginger beer, sold in penny bottles, which had a head like stout, is infinitely preferable to the modern ginger beer with glass bottles and glass stoppers, which is really not ginger beer at all, but sweetened aerated water, flavoured with a little ginger. The brewed ginger beer is generally a little cloudy, whereas this glass-bottled ginger beer is perfectly bright, and is one of the few instances where a liquid, being bright, is inferior to that which is not bright. Brewed ginger beer, when it is old, contains a very trifling percentage of alcohol, but so small that it is not worthy of notice.

One of the nicest drinks, after all, is plain, fresh-made lemonade. All that is required is that the lemon should be fairly new and hard—not old and soft, although in this latter state they appear more juicy, but the juice is very inferior. A lemon is nicest when it peels in that state which, when you squeeze it, recalls the scent of verberna. This lemonade only wants fresh spring water and a little white sugar; the pips should be strained off directly they are squeezed, as they are apt to make the lemonade bitter. Some people in making lemonade put in some of the peel. This is, of course, purely a matter of taste. In very hot weather this is a very delightful drink when iced. It is better to set the jug in a stand of iced water, than to put ice into it, unless you are quite certain as to the purity of the ice. Another very nice drink, of which some people are extremely fond, is made by simply diluting raspberry vinegar with water; and it is at least very wholesome and refreshing.

All kinds of fruit syrups, when they are really good and pure, form delicious drinks for hot weather, but, owing to their sweetness, are not so well adapted for dinner drinks. These syrups are always best mixed with a lump of ice. There are various kinds sold, including red-currant, black-currant, orange, pine-apple, mulberry, &c. Of these, perhaps pine-apple syrup is the favourite. But these syrups, to be obtained good, cost money. What is chiefly wanted is a cheap substitute for a glass of beer that working

men and boys can get for a penny. We firmly believe that if every grocer's shop adjoining the village green, where lads play cricket and football, could be induced to sell iced-sherbet, or iced syrup and water at a halfpenny a glass, more would be done to stop the habit of intemperance than by all the efforts hitherto made by the teetotal societies. If a poor man or poor boy gets thirsty, what alternative has he but a penny glass of ale? He might walk on a hot day till he found ginger beer sold at the same price, and then it would be tepid, and go to his nose rather than allay his thirst. The alternative required is something *cheap* and *cool*. If the country would promote temperance, it must begin by teaching the children. It is no use arguing with men turned forty or fifty. The habits are formed, and it is too late to begin. In the next generation they will have died out.

Ale and Beer.—Of all alcoholic beverages, the one that deserves the chief praise is our national beverage, beer. Were spirit-drinking absolutely abolished, and only beer sold, and that pure and wholesome, there would be certainly much less drunkenness in the country; and some steps are being taken in the right direction, to stop the adulteration of beer in any form. Years back sad tricks were played; and even now some publicans maintain that if they were to sell their beer exactly as it came from the brewer, their customers would not care to drink it, and consequently the beer is not only watered, but doctored. First there are the finings, which brewers themselves supply; and, not satisfied with this, they add foots-sugar, and sometimes salt. By adding salt they help one another, as by the time a man arrives at the next public-house he is sufficiently thirsty to require what Dick Swiveller used to call “a modest quencher.” But it is not with these public establishments that we have now to deal, because ladies, as a rule, are fully aware of the importance of not sending their servants for beer to the public-house; and we think this applies equally to men-servants as well as women, as it is often on these little expeditions that they meet gentlemen of the flash “Toby Cræket” order, besides various other reasons that we need not mention.

Of course, the best plan of having beer at home is to have it in a cask. To keep beer good, you require a cool cellar. Really first-class genuine beer can be had direct from the brewery at 1s. per gallon. It will be found that it keeps better in large quantities than in small: the same beer will taste very superior if drawn out of an 18-gallon cask, to that from a 4½-gallon one. Little need be said with regard to keeping it, beyond a word or two of caution about the

vent-peg, which servants are very apt to leave out, and consequently the beer very soon gets flat. Another point worth mentioning is—when the cask wants tilting, don't tilt it first and then draw the beer, but, if possible, so manage it that you tilt it the last thing at night, when it will have the whole night in which to settle. By this means you will often avoid getting the beer thick, and thick beer is not worth drinking.

This latter remark applies with still greater force to bottled ale. If we have bottled ale for immediate drinking, the bottles are best stood upright; but if we have bottled ale in the house which we wish to keep for a long time, such as the old Edinburgh ale, or the Al Burton ale, which is nearly as strong as sherry, the bottles should be laid on their sides; only take care that they don't tilt too much forward. There is always a certain amount of sediment with these strong beers; and if this sediment collects in the neck of the bottle, it is difficult to get the beer bright. When the time comes for drinking this old ale, great care should be taken in tapping the bottle. If you have a week's notice—that is, if you know you are going to tap a bottle this day week—set the bottles you are going to open upright, and the sediment that has settled at the top will slowly sink to the bottom; but if you take it in the slanting position, you must treat it as a bottle of port.

Ordinary bottled ale is generally sold in imperial pints; but the strong beer is often put in the reputed quarts, shaped like champagne bottles. Draw the cork without shaking the bottle, and have ready, side by side, two, three, or even four tumblers, as the case may be, so that you can pour the whole bottle out without tilting it back. How often you find a stupid servant will open a bottle of, say, Bass's Pale Ale, when the first glass will be bright as sherry, while the second glass will be cloudy, simply because she tilted the bottle back before she poured out the second tumbler; and, remember, this cloudy beer is not simply cloudy, but when so it is also a trifle acid. The last two or three table-spoonfuls in a bottle of ale are best thrown away, or if not thrown away, pray do not allow it to spoil the rest. If some people take bottled ale, and some bottled stout, you can mix the last wine-glass of the ale bottles with the stout, and no one will be the worse or the wiser, but we cannot recommend it.

In conclusion, one word of warning with regard to bottled ale. Bottled beer is very nice cool; but if you put it in an ice-chest too long, it will appear cloudy.

Wines.—Perhaps the most fashionable drink in the present day with dinner is claret. Middle-aged people, with a tendency to get stout, find claret suits

their constitutions far better than ale. It is easier of digestion when pure. Unfortunately, claret is not so easily obtained in the present day as some people think for. Those who have watched the quays at Bordeaux may well wonder at some of the cargoes that unload, including red wine from Italy, and, to our shame be it said, red wine from Australia, as well as red wood to make a red dye, and a vast quantity of raw German spirit. All these help to assist those glorious red hills which for miles and miles cover the ground in every direction, so far as the eye can reach, ripe with purple fruit. The fact is that where one man drank claret fifty years ago there are now fifty. Claret has, deservedly, a great name, but an enormous quantity of so-called claret sold in the present day is mixed with a stronger and a coarser wine that comes from Italy, which covers the deficiencies of the inferior grapes. In buying claret, it is very important to deal only with respectable wine merchants of some standing; and if you consume much, by far the best plan is to get a cask and bottle the wine yourself, as then, having tasted it, you can depend upon it.

Bottling Wine.—Bottling wine at home is a very simple operation if you know how to go to work. First of all, the bottles must be clean and dry, and the corks good. They should be what are known as "long-clarrets." The corks used for bottling beer would not be sufficiently good for the purpose, and another important point is that these corks should be perfectly sound. You probably have all, at one time or another, heard the expression "This wine is corked." Now, what does this mean? It means that the corks were partially decayed. The way to tell when the corks are sound or not is easily done as follows. Suppose you are going to buy twenty or thirty dozen, which would be about the quantity you would require if you were going to bottle off a cask of claret. Dip your hands into the corks, and, taking a big handful, smell them. There is a peculiar smell about them if they are bad—a sort of musty smell, or mildewy smell. Experience, however, will tell you. It would be worth while obtaining a few bad corks if you can get them, in order to tell the difference.

When you commence to bottle wine, have the bottles ready arranged, and also a small basin, into which you should pour a little of the wine you are going to use, in order to moisten the corks. The corks require moistening, and it is far better to moisten them in the wine you are going to bottle than to use water. The corks should be driven into the bottle with a wooden mallet, and, properly speaking, you should have a sort of imitation leather bottle—or, rather, knee-boot—strapped to your knee. As you cork the

bottles, you place them in this leather case, and then hammer in the cork. Occasionally the bottles break, but with the "boot" you do not lose the wine. If the claret is very choice, the corks had better be sealing-waxed, but this is not necessary for a cheap claret intended for this year's drinking. This is by far the cheapest method of buying claret, and it is possible, by this means, to get a decent wine at any rate under a shilling a bottle, but it is false economy to buy the cheapest claret in the market—it is not worth drinking.

There is one curious point in connection with the bottling of wine to which we alluded before, and that is—the necessity of bottling the wine not only when the latter is bright and clear, but when there is an equally blue sky overhead. Many persons may imagine this to be a superstition, but those who really understand the subject must look upon it as an article of faith. Another curious point in connection with wine is that after it is bottled it undergoes certain changes, and there is sympathy between the wine in the bottles and the vines from whence the grapes were picked. The wine becomes what is called "sick," in which state it is a trifle cloudy and not in a fit condition to be drunk. This is always particularly noticed at that season of the year when the vines begin to sprout. Probably there is some principle of life in the wine which makes an effort to burst forth into fresh life, like the grain of corn that will lay dormant in the winter and break forth in the spring. Of course, all this does not apply to that very cheap claret that contains no fruit at all.

The two old-fashioned English wines—if, indeed, they may so be called—are, of course, port and sherry. The former of these has gone somewhat out of fashion, but may ere long return into favour. There are many persons and many families who drink wine every day, but the quantity is confined to one or two glasses of sherry with their dinner. When sherry is taken in any quantity, it is far better to draw it direct from the cask. It is not an uncommon advertisement in the present day to see written up "Wine from the wood," and this very often means a very good glass of sherry drawn from the cask. An exceedingly good pale sherry, quite good enough for all dinner purposes, can be obtained for about £15 a quarter-cask. Now, a quarter-cask would equal about fourteen dozen wine, so that by this means you obtain a really good wine at a little over £1 per dozen. Obtaining sherry this way, you would probably get a better wine than by paying 30s. a dozen for it, and, in addition, you possess the advantage of having it always bright as you draw it from the cask itself; for, remember, sherry keeps better in wood than in bottle. The only expense that you may be put to in connection with a

cask of sherry is the tap. A brass tap will not do; a wooden tap is all right, but it is advisable to have a silver-plated tap. To run any risk with a cask of wine costing £15 for the sake of saving a few shillings in the purchase of a proper tap, is like "spoiling the ship for a ha'porth of tar."

Port is a wine that can, of course, be drawn direct from the wood. A cheap port is best drawn this way; but if you get a heavy, powerful vintage wine, like the 1834, the 1840, the 1847, and of recent years the 1870, after it has been kept in wood for about three years, it had better be bottled, otherwise it will gradually begin to get thin, lose its colour, and taste weaker than it should do. Port wine, when bottled, requires a longer time to develop than any other kind of wine.

Burgundy is a sort of medium between claret and port, but, as a rule, it is best bought in the bottle. Many persons think that wine in the present day is not so good as it was twenty or thirty years ago. This is not the case. There is just as good wine to be got now as ever there was. There are thousands and thousands of pipes of splendid sherry in Spain which only require buying. The fact is that, owing to the universal rage for cheap things, people will not pay the price for things they did thirty years ago. Rich men, with incomes of five and ten thousand a year, put wine upon their tables that makes your stomach ache, and which is inferior in quality to the bitter beer you can get in any London public-house. In the good old days no gentleman ever dreamt of putting a bottle of wine on his table that cost less than 3s. 6d., but now rich men give a wine that costs about 12s. a dozen: in fact, a good deal of the so-called hospitality is of the order of Mr. Peeksniff and his bottle of red-currant wine.

Australian wine, undoubtedly, has a great future before it, and as foreigners become more and more dishonest, so assuredly will their trade gradually decline. On the other hand, should our Colonial brethren, on the other side of the world, maintain their wine in its present magnificent condition, year by year will it be more appreciated by those who possess a palate for what is good. We would strongly urge those who are fond of a really good glass of wine of the Burgundy description to try a bottle known as Carbinet. There is another wine called Highercombe, which resembles hock, and is vastly superior to the majority of hocks one meets with every day. These wines are, to a great extent, kept out of the English market owing to their being above a certain standard of proof. Perhaps in time the bonds of union between the Mother Country and her colonies may be drawn closer, notwithstanding the efforts of that noisy little clique whose motto seems to be "Charity begins abroad." Even as it is,

however, the finer Australian wines, and especially those of the Burgundy class (some almost verging upon good port), are well worth the attention of those who use these beverages.

Champagne does not require so much care as those we have been speaking about. It is, of course, always bought in bottle, and is generally wrapped in straw cases. If you have a very cheap champagne indeed, like Saumur, which is sold at about 24s. a dozen, you can surround it with chopped ice and salt, and, if you like, absolutely freeze it. The wine is so poor that the excessive cold will hide its deficiencies. If, on the other hand, you have a high-class wine, like Pommery, Roederer, or Ruinart, it is a great mistake to really freeze the wine, and still more cruel to put ice in it. Stand the bottles of champagne before they are opened in a wine cooler—a tub will do in which there is some water with some pieces of ice floating in it. By this means the wine is rendered cold, but is not deprived of its flavour.

The cellar forms by no means an unimportant part of the household, if wine be drunk to any extent. Without a good cellar it is impossible to keep wine good for any length of time at all. For instance, one night's exposure to frost would utterly ruin port and claret, and good old bottle sherry and Madeira would be none the better for it. The chief point in a cellar is to have it as much as possible the same temperature all the year round; 50° or 55° is a very fair temperature. Burgundy and Madeira would stand a higher temperature than most wines, but a proper cellar should strike rather cold in summer and warm in winter.

It is a great mistake, which some people occasionally make, to think that in the heat of summer all wines should be sent to table cold. The wine that requires the greatest amount of warmth is Madeira. A good judge of wine will be seen to place his hand round the outside of the glass, and enjoy its bouquet by smelling it before he sips it. The wine-glass should be very thin and very bright, and after you drink a little of the wine, there should be an appearance of oil trickling down the sides of the glass inside. Again, a really good glass of claret, such as Château Margaux, or a fine glass of Burgundy, such as Clos-Vougeot, should be of the temperature of summer heat. Port should not be too cold. Sometimes, if you happen to have a cold cellar, when you tap the wine it will be very slightly clouded; you can get rid of this defect by putting the decanter in the front of the fire for a quarter of an hour. The temperature of good port, claret, Madeira, &c., should be over 60° rather than under; and in cold weather it is always advisable to put the decanter before the fire before you pour in the wine. Imagine a stout and elderly butler, with grey hair, plain black

clothes, and faultless white tie, which seems to whiten in contrast to his decidedly red nose. Watch him warming a beautifully-cut claret-jug before the fire previous to decanting a bottle. Such a scene, nine times out of ten, would mean a good dinner all round. We lay great stress upon the red nose, as showing that a personal interest is taken in the proceedings.

Cups.—In concluding the subject of wines in general, a few remarks on that of cups will not be out of place. There are very few persons in the present day who can really afford to drink expensive wine, which runs into 60s. or 70s. a dozen, and yet many can afford to drink wine at a more moderate price. Now, there are few nicer ways of using up cheap, but at the same time genuine wine, than that of cups. In hot weather there are few nicer beverages than a really good claret cup, and there are various methods of making it. In the first place, if you are going to have claret cup, remember it wants sweetening, and that too often they use powdered sugar, which makes the wine cloudy, as well as settling at the bottom of the cup, thereby rendering the wine too sweet to be pleasant. In commencing, therefore, to make a claret cup, we would always urge you to get some loaf-sugar, fill a breakfast-cup with it, and then pour over some boiling water. Of course, the effect is that the sugar is instantly dissolved, and the syrup at the top of the cup will be bright. Take a large cup, which ought to hold a couple of quarts; or, if you have not got a cup large enough, of course a jug is a good substitute. First pour in a bottle of claret, adding three thin slices of lemon cut out of the centre of a rather new hard lemon. This lemon will be none the worse if a little of the outside is green; we want the verbena flavour. At any rate, avoid an old lemon, rather shrivelled and soft, which would spoil the cup. You may also add a thin slice of the green peel of a cucumber. A piece as long as the thumb and as thick as the thumb-nail would be quite enough. This piece of cucumber peel must not be left in too long, or it will overpower all the rest. Now add a wine-glassful of good old brandy, and a liqueur glass of Maraschino. Then set the cup in some rough ice to get quite cold, and add some of the syrup to sweeten it according to taste: some people like it sweeter than others. You can also grate a very little nutmeg over the top. After it has got perfectly cold, just before it is drunk or served, add one or two bottles of iced soda-water. It is very important not to add the soda-water till just before the cup is taken, since by this means it is freshened up, as it is called. It is also an improvement in claret cup to add a small bunch of balm, and another of borage.

This is one of the best claret cups that can be made, but, of course, you cannot get a good claret cup out of bad claret. A very good variation is to use three or four pieces of an orange instead of lemon; only be careful to pick out the pips, because they make the cup bitter. A small glass of Noyeau can be added instead of Maraschino; and a very good makeshift indeed for either, is two or three drops of essence of almonds, which may be added to the brandy. A still cheaper cup can be made by using no brandy at all, but a few drops of essence of almonds may instead be mixed up with a teaspoonful of the wine, and added. Many persons, instead of adding brandy, prefer about a claret-glassful of sherry; when sherry, however, is added, do not let it be a dry, but a golden sherry.

A capital champagne cup can be made out of a bottle of Saumur. It is best to ice the champagne before you open the bottle. It requires no sugar. Pour the wine into a cup or jug after it has been iced, add two thin slices out of a new lemon, and a thin strip of cucumber-peel; then a liqueur glass of

Maraschino, or two or three drops of essence of almonds, may be carefully added to give it a flavour. A few slices out of the centre of an orange makes a very good variation on the lemon.

With really good cider to make it, cider-cup is a pleasant and wholesome drink. You put into a jug a quart of cider, two glasses of sherry, a liqueur-glass of brandy, two or three slices of lemon, half a dozen or more lumps of sugar, according to taste, and a little grated nutmeg. A few sprigs of borage and balm may be thrown on the top after stirring together. The whole should be iced, like other cups, before serving, and the last thing add a bottle of iced soda-water.

In conclusion, one word of advice about ice. Most of these cups are spoilt by having ice placed in them. If you make the cup in a jug, place the jug with some rough ice round it. If you make the cup in a large china bowl and use a ladle, place a large jug with some rough ice inside it in the bowl. You will thus keep the liquid in the bowl cool, without diluting it.

PAINTING UPON TEXTILES.

THERE is a great variety of woven materials suitable for ornamentation with painting, but the artist will find that in few instances can the colours be "worked up" so thoroughly and delicately as upon such surfaces as china or wood. She who expects to excel in painting on textiles must be prepared to set about her work with the utmost care and neatness, for the materials will most assuredly be spoilt if any stray blot or spot of paint or oil is allowed to fall upon them. No false touch of colour, either, can be removed, and too often any attempt made to paint it out with Chinese white and to begin again only ends in failure. The brushes must be kept scrupulously clean, and must be freed from any particle of paint after each time of using. It is advisable to cover all the parts of pale-tinted fabrics with tissue-paper, leaving only such portions exposed as are being actually worked upon. A piece of paper, too, should always be laid under the hand while at work, and a hand-rest is essential when velvet forms the foundation of the painting. As far more painting is nowadays executed with oil than with water colours, we will consider them first, and will begin with silk and satin, as being the textiles most frequently chosen for enrichment in this way.

Painting with Oils on Silk.—In choosing the silk or satin, the worker should take the medium

qualities in preference to such as are extremely handsome and rigid. If the satin is cotton-backed, it will be rather a recommendation than otherwise, and no silk should be used that has a coarsely ribbed or creased surface. A young worker will probably wish to choose black or white as the colour of the material upon which she is about to paint, but no sooner has she gained a little experience than she will see how vastly superior is the effect given by richer colours or more delicate half-tints. Pale blue, ivory, crimson, green of various shades, old-gold, chestnut-brown, old-rose, and lavender are all good tones, provided that a design be chosen which harmonises, and does not form too vivid a contrast as to colouring. Both silk and satin, being very absorbent, need sizing before any paint is applied, and such size must be applied as will not be likely to discolour the material. Good isinglass or gelatine is safe, and should be used in the proportion of one ounce to a pint of water. The isinglass must be first put into a basin and covered with cold water. Here it must be left to swell for several hours, when boiling water is added. When thoroughly dissolved, the mixture must be quickly strained through a piece of muslin, and used directly. It is not advisable to apply it to the silk with a brush, as it is almost impossible to avoid making a series of streaks. A small piece of sponge, or a stray scrap of soft silk (an old handkerchief,

for instance) will be found far more convenient. If the design is a large and rather spreading one, it is better to size this only, rather than the whole surface of the silk; but this is not always possible. The material must be tightly stretched in an embroidery frame, or out upon a drawing-board, before the sizing is done; and not till this is quite dry will

torical subjects being considered appropriate. A visit to any museum containing even a small collection of fans should be rich in suggestions to the worker. We shall, however, have more to say respecting fan-painting in treating of painting upon gauze.

Whatever pattern be chosen, it must be drawn first upon paper, or upon tracing-linen should the worker



Fig. 1.—OIL PAINTING ON SATIN.

it be ready for the colouring. In the process of drying, it may be found to have shrunk away from the pins which hold it down. If this is the case, more pins must be put in, so that it sets quite straight and square with the sides of the frame or board. The satin is less likely to shrink when stretched in a frame, as the stitches are put far nearer together than the drawing-pins, and so hold it more securely. Floral designs are generally used on silk or satin, but birds and butterflies make an effective change. It is upon fans that the greatest variety in design is permitted—mythological, allegorical, and even his-

feel too doubtful of her powers of drawing it directly upon the silk. From the paper the design can be easily transferred to the material by the help of the useful transfer-linen or paper. A tool with rather a fine point should be chosen for this purpose, as the lines are somewhat difficult to hide with the paint if they are marked too heavily in the first instance. The natural model should always be at hand when flowers are to be painted, for, however well the amateur believes she knows the blossoms, she is sure to find, with no model but a printed one, that there is some characteristic she has overlooked or treated

incorrectly. The colours should be mixed with turpentine; but if a medium be required, megilph can be used for the pale colours, Siccatis de Courtray for the dark ones. If small flowers are represented, little or no shading will be required; but large designs are painted in the usual manner, the high lights being put in last. The novice must be particularly careful to mix her colours thoroughly on the slab or palette before applying them to the material, as otherwise the oily portions of the paint will "run" beyond the outlines and cause an ugly blurr. The colours are less likely to run when used as they are taken from the tubes than when mixed with more oil or turpentine, but the two mediums above mentioned will do much to prevent this. Colours may be freed from their superfluous oil by placing them from the tube on a piece of blotting-paper for a few minutes.

The blotter shown in Fig. 1 is a characteristic specimen of painting upon satin, the pansies looking extremely well against a background which is partly satin and partly kid. These pansies, being yellow instead of purple, are painted in shades of chrome, with touches of deep brownish-purple in the centre.

The single and double hollyhocks in Fig. 2 may be painted either with oil or water colours on silk or satin. If oil colours are used, a good effect may be gained by giving the spike at the left-hand side white flowers, those on the right-hand spike being

dark crimson. The paler blossoms will require lemon cadmium and silver-white, the darkest of the shadows being rendered by a minute proportion of cobalt blue, madder lake, and yellow ochre. The

crimson flowers are best represented by madder lake and burnt sienna, vermilion, or ivory black, according to the depth of colour required. The greens for the leaves should consist of a mixture of lemon cadmium and Antwerp blue, medium or deep cadmium being used for other shades, together with a slight admixture of white. The worker must remember that no list of paints to be used in forming the different shades will enable her to paint a good picture. She who has natural taste and ability will soon find out all sorts of little details for herself which it is not possible to give within the necessarily small compass of such an article as the present. She will soon discover, for example, how touches of pale cadmium and yellow ochre will improve the lighter red flowers, and how the darker ones may be similarly warmed by ivory black, cobalt blue, or burnt carmine. These secrets



Fig. 2.—HOLLYHOCKS FOR PAINTING ON SATIN.

of the colour-box can only be learnt by frequent experiments, and no amateur should ever sit down to work without a few odd pieces at hand of the material upon which she is painting, for the express purpose of trying various mixtures of colours upon. The painting will probably require four or five days in which to become perfectly dry; but if one of the

numerous mediums be used, the process will probably be somewhat hastened. The work is then lightly coated with spirit varnish, care being taken to touch the painting only, and not the satin. This will prevent the colours from cracking, and will give them a slightly glossy appearance, which is a great finish.

Painting on Silk with Water Colours.—

Neither silk nor satin will lend itself well to painting in water colours unless a large quantity of Chinese white be used. Sometimes this is mixed with the paint on the palette, but generally it is thickly laid over the design, and thus forms, as it were, a foundation for the colours. If used separately in this way, the paint is not so likely to crack after a little wear. Some few artists prefer to use

water colours entirely for the early stages of the painting, and put in only the high lights and finishing-touches in body-colour. This involves so much more trouble and such an infinite amount of patience that we can scarcely recommend it as a plan to be followed

by an amateur. Either ox-gall or meguilph may be used as a medium, but there are many others, such as mirrorine or veloutine, that are still more pleasant to work with. When the design has been so thickly coated with white that the grain of the material is entirely hidden, a few of the first washes may be put in before it is thoroughly dry. This will give additional softness to the colours, which must be so laid on that the white below is not scraped up at all by the brush. Turpentine may be used to thin the paints with in preference to water, whilst the water, if employed at all, should always have a small proportion of sugar dissolved in it. Use the brush rather fully charged with colour, and lay each tint, where possible, with one sweep only, being very careful not to go over the same ground again and again. Soften the shadows, and make them glide into each other, by touching them up while still wet with a fine dry brush. The lightest shades here are laid first, and are gradually deepened in tone. Should any fault be made in the colouring of any part of the work, the erring portion must be thickly coated with white, and the colour laid over this when quite dry. In such a case the white is allowed to dry, lest in applying the next coat of colour it should become churned up, and so lay bare the faulty tint below it.

It is sometimes an improvement to the work if a coat of ordinary colours mixed with water be washed over the other paints when these are dry; but if the worker is of opinion that a glossy appearance is desirable, there is no safer varnish than good gum arabic. This must be applied with a broad sweep of the brush, the size of which is regulated by the style of the design.

A second group of pansies is shown in Fig. 3, where they form the decoration of a charming little glove-sachet, the cover of which may be of violet or heliotrope satin or silk. Rose madder and permanent blue give the rich deep purple of the darkest parts of the flowers, more or less madder being used according to the depth of tone required. In mixing the green for the leaves, a touch of rose madder with

the raw sienna and Antwerp blue takes off much of the undesirable crudeness.

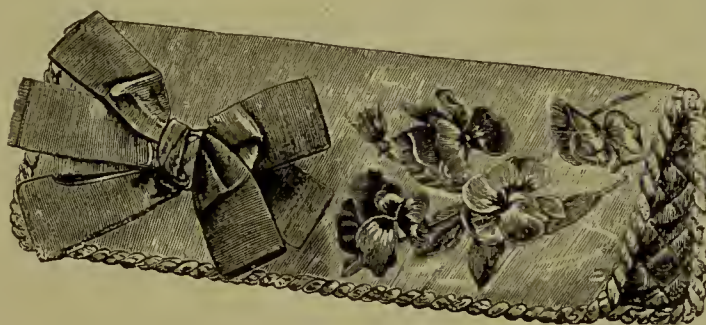


Fig. 3.—HAND-PAINTED SATIN SACHET.

Pennon Painting.—Under this name is known a style of painting lately brought forward as a novelty, and which is generally executed upon

Tussur silk, though other materials may be used. It involves very little time or trouble, so has much to recommend it to those workers who like a good result quickly obtained. Oil colours are used, and any good medium, such as veloutine or Florentine. The designs are conventional, but may be floral if these are preferred to more formal patterns. The silk is first of all stretched in a frame, the design being transferred to it and then coated with the medium. When this is dry, the colours are laid on; they are kept much subdued in tone, the shadows and high lights being indicated rather than elaborately worked up. The painting must then be left until it is absolutely dry, as otherwise, working the embroidery over it will be a most unpleasant task. Thick silks or several strands of filosello or filo-floss are used, the veins of leaves, centres of flowers, and all the outlines being put in with stitches. The more important portions are traced out with fine Japanese gold-thread. Sometimes the silk has an embossed appearance, a large bold flower or similar design being padded with cotton-wool laid between the silk and the lining. When well executed, the work is extremely handsome, and resembles rich brocade. It is very useful for the numerous purposes to which fancy embroidery is nowadays applied, such as table-centres,

piano-scarves, mantel-piece draperies, cushion-covers, and bags and sachets of all kinds.

Painting on Velvet with Oil Colours.—

Velvet is so very unlike silk and satin, as regards texture and surface, that it requires a somewhat different treatment to these fabrics, though the actual colours used may be the same. In the first place, the design cannot be marked upon it in the usual way with transfer-paper, as the pile will become too much flattened by the pressure; but must be pounced. The pattern is drawn upon cartridge-paper, and laid upon an ironing-blanket folded so as to make a fairly thick pad below it. The lines are then followed with a series of holes made with a large bonnet-pin or carpet-needle. The holes must be placed about a quarter of an inch apart, except in the case of long straight lines, when as much as an inch may be left between them. The rule is, that the more complicated the pattern, the closer must be the holes. A good way of pricking the holes is by the use of a sewing-machine. Unthread the needle and work the machine as in ordinary work, taking care that the needle keeps to the lines of the pattern. The pricked pattern is then laid upon the velvet, which is held firmly to a board by drawing-pins, so that neither material may slip out of place during the process. The pouncing powder may be either chalk or charcoal, according to the colour of the velvet. Tie some of the powder up in a small round piece of muslin, and brush this briskly over the design, so that the powder becomes sifted out of the muslin and through the holes in the paper on to the velvet. When the whole of the design has been thus treated, the paper must be carefully removed, so that none of the loose powder becomes shaken off on to the velvet, and the pattern will be found reproduced on the material in a series of small dots. These will probably not be a sufficient guide for the artist in their present state, so they must be connected, as it were, with a fine brush filled with Chinese white, mixed with Barnard's Windsor Tapestry Medium, or one of the many others sold for the purpose. Neutral tint must take the place of white upon light-coloured velvets. A pen is preferable to a brush when the design is delicate and rather complicated. The worker must use her hand-rest, and be careful also not to finger the material more than is absolutely unavoidable. Hog-hair and sable brushes (the latter for the fine touches) are the most suitable, but a good artist will find she is able to do very excellent work with the ordinary and cheaper camel's-hair pencils. The colours should be of about the consistency of cream. If thinner, they will run; and if too thick, the worker will have considerable difficulty in getting them to adhere thoroughly to the material. It is

well to distribute the colour near the edges of a design with a dry brush, or one that is just moist with turpentine, as otherwise it is a somewhat difficult matter to preserve the clearness of the outline. The worker must be prepared for the fact that she will be unable to impart a high degree of finish to any painting that is executed upon such a material as velvet. Very little shading can be attempted, and that only of the broadest.

Painting on Velvet with Water Colours.

—For water-colour painting upon this material, the brushes known as "scrubs" are the most generally useful. These are rather hard, with short and somewhat stiff bristles. They may be had either flat or round. For the finishing-touches the usual sizes of sable or camel's-hair brushes will be needed. The colours will lay well if spirits of wine or sal-volatile be used as a mixer. Otherwise the process in no way differs from painting with water colours upon other fabrics. Chinese white is essential for black and other dark velvety materials. When finished, and thoroughly hard and dry, light-coloured velveteen or velvet is greatly improved by being brushed over with a piece of crape, net, or an exceedingly soft brush. This must, however, be very gently done, or the colours will be scraped off, and the pile flattened rather than raised.

Crewel or Pen Painting.—As the second name implies, pen painting is a kind of etching in oil paints to imitate embroidery, and the way of accomplishing it is so easy that no knowledge of anything more than the colours and shades themselves is necessary. It is usually executed upon velvet, velveteen, or plush, but on satin it has a delicate appearance, which renders it appropriate for trimming dresses and for small fancy articles. It may be applied to wood for such things as photograph and mirror frames, boxes, card-cases, and paper-knives. The material must be tightly stretched on a drawing-board, and the colours mixed to the consistency of butter—with turpentine, if oils; with mastic varnish if enamel colours are employed. Instead of paint brushes, a steel pen is used, a brush only being required with which, as it were, to feed the pen. The brush is thoroughly filled with paint, and is wiped over the under-side of the pen, so that this also is very fully charged with colour. Hold the pen firmly down upon the outline point downwards, turn it over briskly, and the paint should be left upon the pattern. The whole flower or other portion of the design must be thus traced out; the pen is then cleaned, and the loose paint on the outlines stroked out in a series of short strokes, so arranged as to resemble stitches. From the resemblance to crewel-

work thus gained, the work is not unfrequently known as crewel-painting. Some artists lay the paint evenly and thickly over the whole of the flower, and when it is nearly dry they produce the appearance of stitches by stroking or etching upon the paint with a glass pen, a bone knitting-needle, or some such tool. If shadows are required, they are obtained by scraping up the paint with the pen until the dark-coloured material is visible under the paint. Any of the more raised portions of the flowers or leaves require the colour to be laid on thickly with a pen; they are then scored, so that the representation of stitches is well kept up. Centres of flowers, when they are round and knob-like, are arranged by making a round blot of paint, which is dotted over with the point of a rather blunt steel knitting-needle, to give the rough effect of French knots. The worker will see that some considerable time must elapse before such masses of paint become thoroughly dry, but the process will be considerably shortened by the use of the "quick-drying" medium prepared specially for this kind of painting. Good results may often be obtained by using one shade of colour upon another, then stroking the upper tint so that the lower one is visible beneath it. By trying a few experiments, the worker will find that she is able to produce very beautiful effects, dependent upon the selection made of the colours. All the materials for crewel or pen painting may be obtained from the Original Crystoleum Company, 194, Regent Street, which supplies materials ready traced with designs suitable for many purposes, and all necessary paints, brushes, and mediums.

Lustra Painting.—The use of metallic colours upon paintings has come greatly to the front during the last few years, but too often do amateur artists forget that these tints are never found in Nature, and use them upon naturally-painted representations of fruit, flowers, and foliage. To make lustra colours really in good taste, they should be employed only for conventional designs, in which they have often a truly beautiful effect. A great deal of the work is executed upon velvet, but it has the advantage of wearing far better when the colours are applied to silk, linen, satin sheeting, wood, or cloth. The most useful brushes are hog-hair in various sizes, one or two sables being needed for the more delicate parts of the work. There are three ways of executing lustra painting. Either the whole of the design is painted with the metals, or the background only; or, again, the main portions are painted with oils, and the lustra colours are used in place of the highest lights. The latter plan is more successful with light than with dark colours, and the work looks specially well when white flowers are painted and touched up

with silver. In this case the deeper tones in the shadows are formed by painting the silver over with dark or oxydised silver. There are at least sixty colours and thirteen metals to be had, and as new shades are being brought out constantly, the amateur should have little difficulty in tinting her work artistically. If the background is to be painted with the metals, the design must be coloured with oil paints first in the usual way, and when dry the grounding is put in very evenly and smoothly with gold. A large brush must be used for those portions that are not covered with painting. It is advisable to begin at one of the corners, and to sweep steadily down the material, using the paint so plentifully that all the substance of the fabric is covered with it. A smaller brush will be wanted for the ins and outs between the pattern, but equal care must be taken to avoid any streaky or smeary appearance. If the design only is to be in lustra painting, a slightly different plan is pursued. We will suppose that the design is floral, and is traced upon a background of rich blue velveteen. Here the flowers may be either silver or gold with good effect. Take some of the silver powder, place it on the palette, and rub it down with the knife. Shake the bottle of medium well, and mix some of it with the colour until the paint is as thick as thin cream, and perfectly smooth and free from grit. It must be laid rather thickly over the design, the brush being held in a somewhat upright position, and the paint being thoroughly well rubbed into the pile of the velvet. In a very large piece of work the colour should be of a thicker consistency near the edges than in the middle of the design. This is done to prevent it from "running" beyond the outlines. The flowers may be shaded by using purple, black, and white, with a small proportion of silver. Gold is to be used in the same way, and may be shaded with brown gold. The leaves are painted with green, and may be shaded with powder colours mixed with a little of the lustra colour or with a darker shade of green. Two coats will probably have to be laid if the material is dark, and it is well to give the first one a day to dry. Then the shadows and high lights may be deepened and brightened; and when the paint is once more dry, the work is finished. Mr. J. Elliott, of 134, Regent Street, the inventor, in the directions he gives for the proper use of the colours, says that "in working on velvet more colour should be used on the high lights. On light materials, and on satin, the shadows are made by mixing black with the colours. The colours may be mixed with each other in any proportion, as in ordinary paints." No brush should be used until it has been thoroughly cleansed with turpentine from the colour for which it was last employed, and the amateur must be

specially careful never to put the brushes away soiled with paint. In working on velvet or plush, it is always advisable, and indeed far easier, to paint *with* the direction in which the pile is laid, rather than *against* it; but of course this is not always possible. One way of using lustra colours is to apply them over a foundation of oil paint, but this is generally more successful with light than with dark colours.

An infinite variety of fancy articles can be ornamented with lustra painting, and, as one of the advantages claimed for these colours is that they can be washed or cleaned when the background is soiled, the worker need not hesitate on this account to use linen, pale-coloured satin sheeting, jean, and other and similar light materials. This style of painting, however, loses much of its effect when employed upon such small things as sachets, work-bags, brush and comb cases, or doyleys. It is often really gorgeous upon curtains, mantel-borders, quilts, table-cloths, screens, door-panels, and piano-fronts. For ecclesiastical purposes, too, it is quite appropriate, and designs are supplied by Mr. Elliott for banners, altar-cloths, antependia, reredoses, and texts. Friezes and dados are generally painted upon prepared paper. Terra-cotta and greenish-blue are good backgrounds for the metals, but the use of these must depend entirely upon the other colours employed in the room.

Oxydina Painting.—Under this name has lately been brought out a style of colouring adapted to linen and other washing fabrics. The colours are indelible, and are said to resist the hardest wear and tear that can be caused by frequent washing and cleaning. Owing to the nature of the paints, the work differs considerably from most kinds of painting, as will be shown presently. The material must first be washed and thoroughly scalded, in order that all traces of "dress" may be removed; it is then stretched in a frame, and the design transferred to it. This should be done by means of paper over which powdered charcoal has been rubbed, as the marks thus made are more easily removed when the fabric is washed than are those made by the carbon-paper sold at the shops. The designs most appropriate to the work are conventional in style, for as yet there is not sufficient variety in the colours to allow of the execution of naturalistic patterns. Some of the most satisfactory of the dyes are yellow, blue, tan, and pink. The two latter are so "fast" as to be quite uninjured by exposure to bright sunlight, or by any amount of scrubbing and washing. Lilac, salmon, brown, and sage-green are also to be had; the three former are said to stand washing well under ordinary circumstances; neither blue nor green, as is the case with silks and wools, can be depended upon for

durability. Each colour costs 1s.; but as some require two solutions to develop them properly, the two bottles can be procured for 1s. 6d. All colours and materials are to be had at Mr. Elliott's Studio of Decorative Art, 134, Regent Street. Hog-hair brushes are used for the colours, and as these have literally to be scrubbed into the material, they must be rather short and stiff. A special kind of medium is sold for use with the paints, and the proportion of this must be regulated by the depth of colour required. Sometimes equal parts of medium and paint are needed, sometimes more medium and less dye. It is often advisable to measure the medium and paint in a glass such as is sold for measuring medicine. This is very necessary when more of one tone of colour is wanted that can well be mixed and used at once. Should the dye be found rather too thick to soak well into the material, it may be made more liquid by the use of water. This soaking in is very important, and the dye must be thoroughly scrubbed in, so that no thread of the natural linen is visible beneath it. When all the portions of the design have been coloured, the material must be left to become perfectly dry. The different colours then have to undergo various processes, whereby their depth of tone is improved and rendered clear and ingrain; but as these methods of finishing the work vary with each colour used, it can be readily understood that the fewer shades employed the easier the painting. The tan, for instance, is laid on in two coats; the material is thoroughly saturated with No. 1, and is put aside for a day or two, till quite dry. No. 2 must then be painted over No. 1. The artist must not be alarmed at the dingy aspect taken by this colour—it will soon improve; and when it has settled for about twenty-four hours, the material must be rinsed thoroughly in cold water. The water must be frequently changed, until it runs off the material quite free from any tinge of colour. The linen may then be dried, and ironed in the usual way. The yellow shades are treated in the same manner, but require washing and ironing as soon as possible after the paint is dry. Red needs finishing in a far more complicated manner. The material must be allowed to get perfectly dry; it is, of course, either stretched in a frame or pinned out on a board, and the painted portion must have a coat of ordinary flour paste laid smoothly over it with a small soft brush. The paste must be laid on very thickly, and so that it entirely covers the painted part of the fabric. While it is drying, a large vessel of water must be placed on the fire; and when the water boils, the linen is immersed, and allowed to boil quickly for from three to four minutes. It is then rinsed in cold water, and ironed. Blue merely requires sluicing round in cold water. Directions for "dressing" the colours are

sent out with each, and few require so elaborate a treatment as the red. The design should, when the painting is complete, be outlined and partially filled in with coloured silks, or outlined with washing gold-thread. By choosing silk of a harmonious tint, very pretty effects may be gained, and the work is specially well adapted for curtains, bed-spreads, and other similar purposes, while for washing-dresses scarcely any more effective trimming could be found. The oxydina paints are to be used in many different ways, but, of course, some of their best qualities are lost if they are applied to any but washing materials. Few people who try them can fail to admire the ingenuity that has prompted the invention of such an artistic and novel occupation for amateur artists.

Tapestry Painting.—Painting upon canvas is to be recommended to those who like to produce a good and bold effect with the exercise of very little time and patience; and lovers of real tapestry who are unable to cover their walls with the genuine productions of antique looms, should feel amply content to possess good and well-painted specimens. When skilfully executed, and hung in place, it is hard to believe that the pattern is not woven in the usual manner. A sweeping, free touch is very essential, as the colours are all put on in flat washes, little or no working up being possible.

There are several ways of executing tapestry painting; it may be done with oil paints, in which case a good quantity of turpentine is required to render them moist enough to flow well, or the design may be put in with liquid colours prepared for this special purpose, and worked up with oils. The best plan is to use these liquid colours for the work, as they not only give the effect that most resembles woven tapestry, but wear better than any others. They may be had from Messrs. Lechertier, Barbe and Co., Regent Street, or from Messrs. Howell and James. The most convenient brushes are short, round hog-hair ones, sometimes known as "scrubs;" the flatter brushes employed for oil painting are useful also for the more delicate portions of the design. A number of saucers or small cups is required to hold the dyes, for, as these are very liquid, a palette is of little use. It is well to label each cup, according to the shade of colour it contains. Thus No. 1 will be the lightest, Nos. 2, 3, and 4, or 5, perhaps, the darkest shade. It is better to mix too much than too little of the colour in use, as it is difficult to get the shades in the proper proportion a second time, and the difference will be plainly visible when the second mixture is laid upon the canvas. The tints, in soaking into the material, will naturally lose some of their brightness

of tone, so it is advisable to mix the shades rather brighter than duller than they are ultimately desired. The paints should be strictly kept in the glass bottles in which they are sold, as they are apt to do damage if brought into contact with metallic substances. The stoppers will be prevented from becoming fixed in the necks of the phials if they are kept slightly greased.

The canvas used for tapestry painting is to be had in a great many different widths, varying from about one yard to as much as three, or even more. Either of the firms above mentioned will stretch the material for an amateur, as it is impossible, in the case of a large surface, for her to do this for herself. The canvas varies in colour, too, from a shade that is nearly white to one that may almost be described as brown. The number and thickness of the threads in the fabric vary according to the style of tapestry that is to be reproduced. Indeed, when a special make is to be copied, the threads in a square inch of the original are counted, and a canvas chosen to correspond. The design may be either drawn upon paper, and transferred to the material in the manner already described in these pages, or, better still, it may be drawn directly upon it with charcoal. The worker must complete her drawing before attempting to lay on any colour, and she must carefully dust off any loose particle of the charcoal that may hang about the material. She must then go over the charcoal lines with a fine sable brush and some of the colour that is to be afterwards used for the painting of the different parts to which these outlines belong. The colour will be economised, and will soak in better, if the canvas is wetted well before beginning to paint. The artist must not be too impetuous in laying on her colours, for so subtle and penetrating are the dyes, that if a wrong tint has been used it is a sheer impossibility to remove it. She may scrub and scrub with water, but, in spite of it all, the obnoxious colour will hold its place, and the only result of her pains will be to roughen the canvas and make its surface unfit for the next wash. The use of soda or pearl-ash dissolved in water is sometimes recommended for washing out a wrong colour, but this also is rarely quite successful. Experiments should therefore always be made upon a loose piece of canvas, and the artist should never set about her work when engaged in chit-chat, or when her mind is full of other matters.

In Fig. 4 is given an appropriate design for an oblong panel in this kind of work; but should the worker feel doubtful of her powers of rendering the figures and faces, she may prefer to try her skill upon fruit or flower subjects first. One of the first difficulties likely to arise will consist in the blending the shades so that, as it were, they melt imperceptibly one into another. There is a "knack"

required in doing this, one secret of which is to use a second wash before the first is dry. In such a design as that in our illustration the main colouring

are made by mixing chrome and cobalt (for light shades), cadmium and indigo or Prussian blue (for rich tones), raw sienna, indigo, and chrome yellow (for



Fig. 4.—PANEL OF PAINTED TAPESTRY.

must be concentrated on the figures, the trees and landscapes forming only an effective setting for them. Various shades of green appropriate for trees

deep shades). The trunk of the tree behind the horse should have for its first wash yellow ochre; the shadows are put in with grey, and any deep

markings and sears there may be with Vandyke brown or sepia. The dresses should be of bright tints softened down, with due attention to the folds in the draperies. Bright blue is a colour not to be too lavishly used, as it is apt to give an effect of hardness to the work. Burnt umber will, however, tone down the shadows and give them more richness. Some colours require the admixture of pierie acid, which is usually supplied with the paints, in order to bring them to the proper depth. By its use yellows are rendered deeper and richer, blues become greener, and pink more yellowish.

The

artist must be prepared for hard work in some portions of her painting, as it is necessary literally to scrub the canvas, in order that the colours may become thoroughly soaked into it, for the fact of its being merely a copy of woven tapestry will be at once apparent if any of the ribs of the canvas happen to show between the colouring. In the second washes must be arranged the deeper shadows; objects in the foreground should be brought into greater prominence, the usual care being shown in merging the shades one into another. The idea of the work being done in a series of washes is carried out here also, the shadows being put in with a straight, even movement of the brush, never with any effect of cross-hatching or stippling. Some artists leave the highest lights to show in the undyed surface of the canvas itself, others put them in with white oil paint after all the rest is done.

Gold may be used on some pieces of tapestry if desired, but the amateur should beware of painting a border mainly in gold, as though it were intended to represent the setting of a picture. It is better to use the pure gold leaf for tapestry than any of

the preparations sold in shells or bottles for the purpose. Two coats of shellac varnish are first evenly washed over the painting, care being taken that they soak well into the fibres of the canvas. It must then be allowed to dry until it is "sticky" only. The gold leaf is spread upon the cushion, and cut into the small pieces required for any special part of the design. A camel's-hair brush is passed through the artist's hair, and the gold will then lightly adhere, if gently touched with it. The gold must be placed on the part to be gilded, and pressed down with a tuft of cotton-wool, so that it adheres firmly and smoothly.

All loose fragments must be gently brushed off with a clean, dry brush. Finally, the gilding must be covered with parchment size, and when dry it will



Fig. 5.—HAND-PAINTED FAN.

be found almost indestructible. The border is a very important element of tapestry of a certain date, and so must receive due attention at the hands of the artist. Finer work is needed here; and in the illustration it will be noticed that some of the larger flowers are so drawn as to show the under-sides, which causes slight variation in the arrangement of the colours. Tapestry painting bids fair to outlast many of the other, but perhaps more showy, kinds of artistic work, owing to its durability and the ease with which it may be taken down, rolled up, and put away till required in another situation. No amount of damp or of ill-usage will harm it, and it also bears to be frequently dusted and lightly brushed; the very nature of the dyes, it is said, is such as to preserve it from attacks of moth, which frequently

play sad havoc with other and more precious wall-hangings.

Painting on Muslin.—Painting on such transparent materials as muslin or gauze is always more or less in vogue for evening dresses and for fans. No really good work can be done unless the muslin is well stretched in a frame. One such as is used for embroidery will answer well, if the fabric is to be coloured on both sides; but if on one only, a drawing-board will be equally convenient. It is indispensable that a thoroughly good quality of muslin be selected,

a good effect when mixed with a solution of gum tragacanth, for if the painting is intended to be transparent, the Chinese white is apt to be heavy. Should the muslin be found very absorbent—and it is always as well to try experiments on a loose scrap—a sizing of gelatine or isinglass is essential, and over that a coat of Chinese white. After the size has been applied, the material will probably be found to have shrunk away from the stitches or pins with which it is stretched; if this be the case, it must be strained again before being moistened for the second time. It may need two coats of size, but the artist

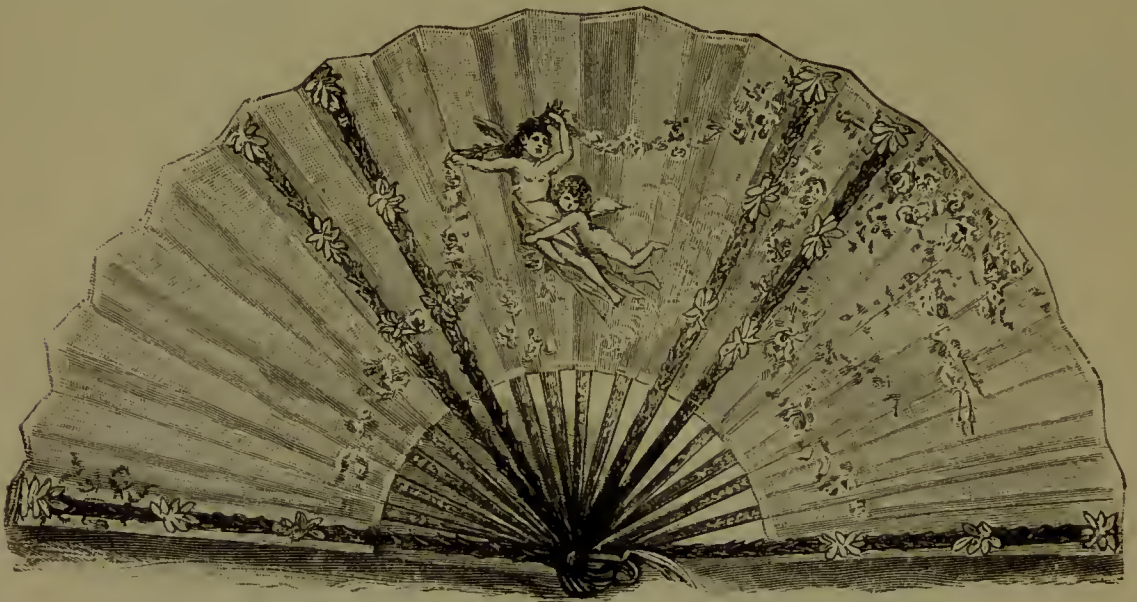


Fig. 6.—GAUZE FAN.

and one that is fine and evenly woven. Swiss mull with a good surface and high finish can be procured from Messrs. Lewis and Allenby, Regent Street. It is about forty-eight inches wide, and costs from 3s. 6d. to 5s. a yard. An extra wide quality with a less glossy finish can be had for 5s. 9d. a yard. The design should be marked distinctly with black ink upon stiff white paper, or upon coloured glazed calico. This is laid below the muslin, and the design should then be so clearly visible that no difficulty is experienced in tracing it on the material with a finely-pointed lead-pencil. If this is not the case, transferring-linen must be utilised. Oil colours are sometimes used, but prettier and more delicate effects are gained with water colours. Florentino medium is the most suitable for use with the former, but megilph is preferred by many workers. This, however, should not be used with the different shades of blue, as it is apt to give them a greenish tint, which is not desirable. Water colours have

will best judge of this by trying a little paint on the loose piece of muslin, which has, of course, been sized also, and noticing whether the colours sink in too much, or run beyond the outlines. If white be used, the first coat must be quite dry before any tinting is done, as otherwise there may be a difficulty in using other colours without disturbing it. The work is capable of being very highly finished, and natural designs representing flowers, birds, and butterflies are generally selected as being those from which the best results are to be obtained; but the fan shown in Fig. 5 gives an idea of the delicacy of workmanship that may be expended upon gauze, satin, or vellum for this purpose. This fan gained the first prize at the exhibition of fans organised by the Fannakers' Company in 1890. Should it be desirable to paint so that the design is equally presentable on both sides, it must be thickly coated on each side of the muslin with Chinese white before any colour at all is applied. The material may be

constantly turned, so that both sides are painted upon almost simultaneously. Care must be taken to rest the frame upon books, so that there is no chance of the painting becoming rubbed while it is still wet. There are special frames sold for holding such a material as this, that not only keep it taut and steady, but have a moulding all round, which protects it from injury.

Painting upon Gauze.—Suitable gauze for fan-painting may be procured at many of the shops where painted fans are made a speciality, such as that of Mr. J. S. Gregg, 92, New Bond Street. Here

consistency of the colours. If too thick, a number of streaks will be made; if too thin, and the brush too full, the white will create confusion in the design by straying too far beyond its outlines. The paint in the latter case must be tenderly removed with a piece of blotting-paper and a few touches with a small clean brush just moistened with water. The first coat must be allowed to get perfectly dry before the colours are laid on, but the worker will probably find that a second coat of white is required to fill up irregularities, and to render it sufficiently opaque to serve as a foundation for the colours. Possibly it may only need looking over and filling in here and



Fig. 7.—ROUND FAN, PAINTED ON GAUZE.

gauze expressly prepared for fan-painting is to be had in shades of yellow, grey, and heliotrope. The last tint is particularly appropriate as a background for white flowers, or for violets and pansies. In painting on this material some difficulty will be found, owing to its extreme delicacy. As with muslin, both sides should be painted alike when a fan is to be made; and it is better for the material to be laid over the design drawn on paper, as no corrections can be made if the pattern is sketched directly on the gauze. Chinese white will be needed, water colours, small sable brushes, medium, and the usual etceteras—such as a drawing-board, pins, and tracing-paper. The material must on no account be allowed to become creased; but if larger than the board, the remaining portion must be wrapped round a roller, and fastened with a pin. We will consider first that the material is to be painted on one side only. The gauze, if bought specially prepared for painting, will probably be found to take the colours readily; and the first thing to do is to cover up the whole of the design with Chinese white. A good deal of practice is necessary to determine the proper

there, especially near the edges. When this is done, and the white is absolutely dry, the colours may be laid on. If both sides are to be alike, the design on the gauze is first thoroughly soaked with white, one side being done first; the frame is then turned, and the other side done at once while wet, beginning where the first was commenced. In this way the two sides become equally coated, but the paint will need fully four-and-twenty hours before the painting can be continued. It is well to use the colours as dry as possible, for, if the white becomes at all disturbed by them, they are likely to get blurred by it, and it will be a very difficult matter to remedy this misfortune. Metallic paints are occasionally used in fan-painting, but the artist should always buy the very best qualities, never being tempted by the metals put up in penny or twopenny shells or saucers. They can be had at any good artists' colourman, are such as are used for illuminating, and will be found the best economy in the end. The Chinese white will not be needed with metals, as the less opaque they are the better their effect. Most of the gauze fans now are painted with very light and

delicate designs, the material being often cut away round the upper portion of them, thus giving an irregular outline to the upper edge of the fan. Popular taste also inclines to figure subjects, such as those given in Figs. 5 and 6. The worker may gain many a hint by walking down any good street, and noticing the fans displayed for sale in the shop-windows. In this way she is better able to keep her painting up to date than were she to depend solely upon her own ingenuity. A pretty round fan, painted on black gauze, is given in Fig. 7; but it is by no means necessary for all painting on gauze to be made up into fans. Lamp and candle shades, dresses, jabots, desert doyleys, parasol trimmings, and a large number of fancy articles are now made both of gauze and of muslin. Black gauze for evening dresses has a pretty effect when painted with gold; for such a purpose, as the gowns are not required to last as long as a fan, Judson's or Bessemer's gold paint will answer perfectly. A good result is often to be obtained by painting the design upon gauze of one colour, and enclosing it between two sheets of gauze of another tint. This gives a sort of shot appearance to the background. Very satisfactory is the effect of blue gauze in the middle, with pale pink on each side of it. This sort of arrangement is best suited for candle and lamp shades

Painting on American Cloth.—Very effective work is now often done, for splashers to washstands

more especially, upon American cloth, with ordinary oil paints and hog-hair brushes. Other materials upon which painting of various styles is both appropriate and pretty are lincrusta, leather, and Japanese paper. The latter in particular has been suggested in an article in *The Woman's World* as a suitable material for making wall decorations in the style of the well-known Japanese kakemonos, and one of these English wall-pictures is shown in Fig. 8. The painting in the middle is framed lightly in wood, and mounted within three strips, the centre one of which may be of lincrusta, the side ones of paper. The amateur artist will probably prefer to vary this by making the middle one linen, or even sateen handsomely ornamented with painting, the side ones being of Japanese paper. Whatever material be selected, it is attached to ivory-tipped rollers at its upper and lower edges, like a school-room map, and is furnished at the top with a ring, by which it can be suspended. Lincrusta and American cloth, too, can be painted and arranged as door-panels. The

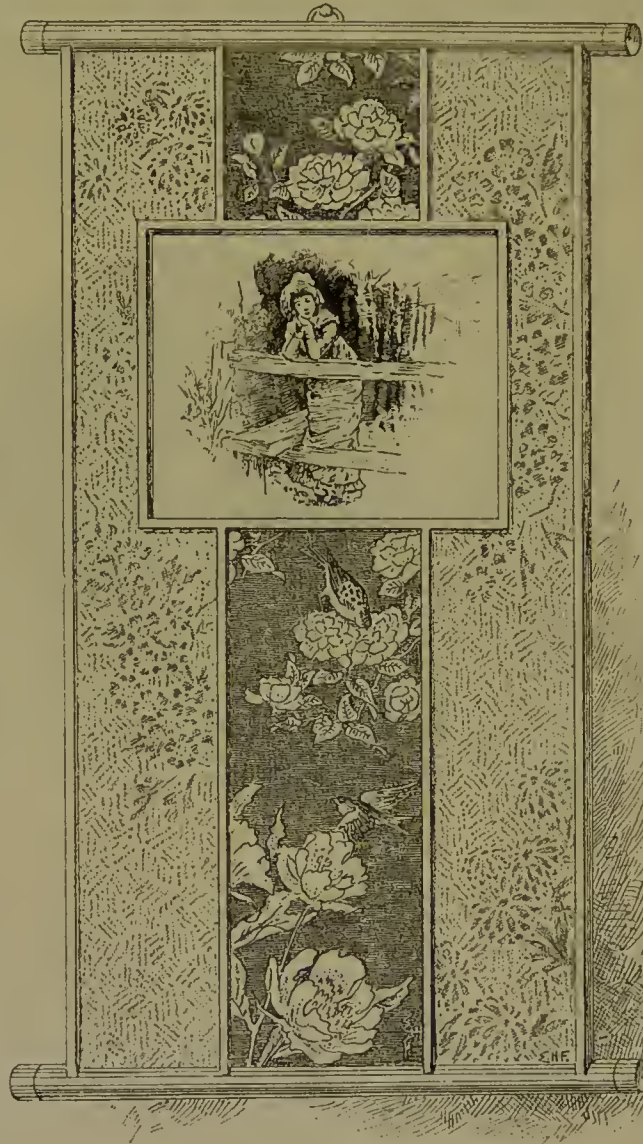


Fig. 8.—WALL PICTURE.

latter material is to be had in a great variety of delicate colours, as well as in gold and silver; and as the fabric is very wide, and the most expensive is under three shillings a yard, no worker need object to it on the score of expense. Other and very effective panels are often painted upon rough canvas, such as "Hessian." To be really satisfactory, the colours should be full and rich, and the work hung where it will not be subject to close inspection.

THE FUTURE OF OUR BOYS.—II.

The Civil Service.—The appointments of the Civil Service were some years ago thrown open to public competition, and, with the exception of a few technical appointments, they continue, and are likely to continue, to be so. Consequently, the service offers a most excellent opening to young people of ability, industry, and perseverance.

There are a good many departments in the Civil Service, the most important of which are the Treasury, Home Office, Colonial Office, Foreign Office, India Office, War Office, Admiralty, Board of Trade, Post Office, Customs, Excise, Telegraph Office, Exchequer Office, National Debt Office, Office of Woods and Forests, Office of Works and Buildings, Duchy of Lancaster, Duchy of Cornwall, Record Office, Poor Law Board, Registrar-General's Office, Ecclesiastical Commission, British Museum, &c., &c. As might be expected in these various departments, a large number of clerks and other officials are employed. For the most part these clerks enter the service when quite young, the limits of age for the Second Division Examination (the one from which the majority of appointments are made) being from seventeen to twenty. The examination is not particularly difficult. No special preparation is required for it; but the competition is so exceedingly keen that the proficiency of successful candidates must be considerable. It is, however, well worth while for a boy to take pains to fulfil the requirements of the situation, and to pass the examination; for if once he gains a footing in the service, his future is practically assured, supposing always that he does his duty, and preserves health and strength. He will commence with a low salary, the amount varying in the different offices; but, at any rate, it will be sufficient to enable him to live decently, and it will gradually and regularly increase until he will have a fairly comfortable income. The chief advantage of the service is that it is becoming more and more the custom in Government offices to give the higher posts to men who have creditably filled the lower ones, and thus it comes to pass that the young men who come in by the Lower Examinations enjoy excellent prospects of promotion. Three hundred and fifty pounds a year is the highest salary which a clerk in the Second Division can receive; but there is no reason why he should remain in the Second Division; and if he obtains one of the higher posts, he is almost sure to do well.

Let not, however, intending candidates make the mistake that, if they can obtain a position in the Civil Service, they will for the future have "little to do and plenty to get." An individual who was for some time a clerk in the service gives some informa-

tion on this point which may be of interest. He says:—

"There are a good many popular delusions current about the service which appear to be regarded by many inexperienced persons as undoubted and indisputable facts. It is generally supposed that a Government department is a sort of Eldorado, and that, having once obtained an appointment, the young clerk has nothing to do but 'live happy ever after.' A stranger would, however, find as much industry, and as earnest a devotion to the business of the hour, in most Government offices as in the busiest of City houses.

"If the young official has intelligence and tact, he may hope to be relieved at no very distant period of those merely mechanical and elementary routine duties which will naturally be allotted to him at first. To some men favourable opportunities of bringing themselves into notice occur sooner than to others; but in the Civil Service, as in other callings in life, men who are really worth anything are pretty sure to come to the surface sooner or later. Some clerks, finding that for a few months after their entrance into the office no notice is apparently taken of their efforts to excel, gradually become careless, arrive late at the office, take frequent holidays, and perform their work in an unsatisfactory and negligent manner. Unless this kind of thing is carried to an impudent excess, it is possible that nothing will be said to the man himself; but when a vacancy occurs in a higher grade, or a post becomes vacant which involves some degree of responsibility, he may expect to find his name passed over."

Individuals who desire to enter the Civil Service should first of all obtain from the Secretary of the Civil Service Commission, Westminster, S.W., a form of application. Upon this form a request for permission to attend the examination will have to be written. Applications have to be sent in from about a month to six weeks before the date of the examination. Notice of all open competitive examinations is given some time previously in the *London Gazette*; and, besides this, a list of the forthcoming examinations is specially advertised by the Commissioners in a prominent position in the principal London and provincial newspapers.

In every examination a number of the vacancies are given to what are known as "boy clerks," or clerks who have commenced work as "boys" in an inferior position, and who are permitted to pass with a lower number of marks than must be obtained by the ordinary candidate.

On the whole, it would be safe to say that the Civil Service furnishes one of the most valuable

openings for young men which can be named. It is true that the plums of the profession are not numerous; the number of individuals who rise to £1,200 a year, for example, is small. At the same time, the number who gain comfortable incomes, varying from £300 to £800 a year, is larger than in any other profession, and even Second Class Junior Clerks receive remuneration upon which they can live. Thus in the Treasury, which has a staff of about forty-five persons, the lowest salary paid is £95 a year, and at least one-half of the clerks have £500 a year. In the Foreign Office, where there are about eighty secretaries and clerks, about a third receive over £500 a year, and similar proportions are maintained throughout.

Civil Service Appointments Abroad.—

Young men of ability and education, whose health is good, and whose family ties do not require that they should remain in England, may gain an excellent opening in the Indian and Colonial appointments of the Civil Service. The appointments are made by competitive examination; and though the examination is exceedingly severe, crowds of young men enter it, many of whom fail lamentably. Those who succeed, however, have a promising and interesting future before them.

There are several departments in the India Civil Service, as there are in the English Civil Service; for all of them, however, the examination has to be passed. This examination has to be passed while the student is nineteen, and it is usual for candidates to prepare for it by studying, after leaving school, with a crammer, who makes this part of the service his special study. The competition is so keen that it is necessary for the candidate to work hard if he hopes to succeed. Once through, however, his course lies free and open before him. But his education is not yet considered complete, for before he is permitted to proceed to the field of his future labours he is expected to study two years at a university, and to pass a final examination. His expenses during this period of probationship are, however, paid by the Government, who allow the student £300 a year. When active employment begins, he receives at once a salary of about £400 a year, and this soon increases until he is in receipt of a very handsome income. If he is fortunate, and if his health is maintained, he may expect in a few years to earn from £1,500 to £2,000 a year.

The remuneration paid to India Civil Servants is handsome, but it has to be earned. The price which has to be paid for it is not so much hard work as health. Very few Europeans can stand the climate of India without suffering, and the India

Civil Servant has to look forward to a time when his constitution will be shattered. Moreover, if he marry and have a family, he will be unable to keep his children with him; while quite young they will have to be brought to England, and left there for a term of years. Nevertheless, at the end of nine years he will have leave of absence for a year and a half, and at the end of twenty years he will obtain a pension, and these substantial advantages are regarded by the majority of candidates as an equivalent for the trials which Civil Service abroad entails upon those who undertake it. In 1892 it is expected that the limit of age for the India Civil Service will be twenty-one and twenty-three, instead of being seventeen and nineteen, as it now is.

The Civil Services of Hong Kong, the Straits Settlements, the India Public Works, and the Chinese and Japanese Consular Service are all supplied by candidates who have succeeded in passing the open competitive examinations required. The regulations vary with regard to each, but the prospect in all is very good. They are not considered to be of equal importance with the India Civil Service, but they are very little inferior thereto, and the advantages and disadvantages are very similar. Perhaps the examination in which there is the least competition is that which admits to the India Public Works Department. The reason of this is, however, that after passing the examination students are expected to attend the Royal Indian Engineering College at Cooper's Hill, near Staines, the annual charge of which is £180 for each student, in three payments of £60 per term. These charges are not defrayed by Government, as is the case with India Civil Service candidates; they must be paid by the student.

Engineering is generally understood to be one of the finest of careers, and to be full of promise for those who enter it.

Strictly speaking, engineering "is the art of designing and constructing works," the works referred to being those which are needed through the advance of civilisation, such as canals, harbours, docks, roads, cuttings, embankments, bridges, railways, viaducts, lighthouses, water-supply, irrigation, sewage, gas-supply, electrical appliances, fortifications used in war, &c. &c. As a profession, engineering has been in existence in England for about one hundred and fifty years; magnificent fortunes have been made by it, men have risen to eminence in connection with it, and there is every reason to believe now that human activity is so great, and that such innumerable constructions are being reared on every side, that fresh fields will be opened to those who devote themselves to it, and that its usefulness will

be even greater in the future than it has been in the past.

Regarded as a career for young men, therefore, engineering may be pronounced to be most important and promising, and it is a very interesting question how a footing may be gained within the ranks of those who devote themselves to it. Looked at from the point of view of value to the community, engineering is a very simple affair, about which there is not much room for difference of opinion. Looked at, however, from the point of view of a parent who wishes to put his son into it, or of a young man who desires to take part in it, the difference of opinion is very remarkable.

The fact of the case is that the business of engineering has to do with a very wide range of subjects, and the profession of engineering is divided into many departments. Of these the following are the most noticeable:—

Civil Engineering, which concerns itself with designing and constructing works which have arisen through the advance of civilisation, such as railways, roads, bridges, &c. &c. In this department are included *Mechanical Engineering*, which concerns itself with machinery, steam-engines, tools, agricultural implements, &c.; *Hydraulic Engineering*, which concerns itself with water-works, reservoirs, drainage, and irrigation; *Dock and Harbour Engineering*, which concerns itself with the construction of piers, lighthouses, &c.; *Mining Engineering*, which busies itself with the construction and management of mines, of whatever nature; and *Electrical Engineering*, which is employed on the construction of the increasingly large number of works to which electricity is applied. In addition, there are *Military Engineering*, which has to construct fortifications and make surveys in time of war; and *Naval Engineering*, which concerns itself with appliances required on board ship.

It is very obvious that to carry on the various works here referred to, a large army of workers must be employed, and also that these workers must be possessed of very great ability and skill. It is here where the difficulty comes in. If those who are to be the engineers of the future are to do their work properly, they must be taught how to do it theoretically as well as practically; they must not merely work by rote, but they must know why certain steps should be taken: in other words, they must receive technical education.

Not many years ago the would-be engineer was simply apprenticed to a firm which carried on the kind of engineering preferred. Very probably a premium was paid with him; but whether this was the case or not, he began at once to work at his business, and he learnt to do his work by doing it. Up to a point, this training was very successful, and the majority of

the engineers of the past who have constructed magnificent works, and hold important positions, were taught in this way. Now, however, this system has broken down. Competition is so keen, and improved methods are so usual, that it is necessary for a young man who would succeed to work from theoretical as well as from practical knowledge; and scientific men are most earnest in declaring that if our countrymen desire to hold their own, they must be technically taught. Thus, in an article on "The Struggle for Existence," which appeared in the *Nineteenth Century*, Professor Huxley said: "Technical education in the strict sense has become a necessity, for two reasons. The old apprenticeship system has broken down, partly by reason of the changed conditions of industrial life, and partly because trades have ceased to be 'crafts,' the traditional secrets whereof the master handed down to his apprentices. Invention is constantly changing the face of our industries, so that 'use and wont,' rule of thumb, and the like, are gradually losing their importance, while that knowledge of principles which alone can deal successfully with changed conditions is becoming more and more valuable. Socially the master of four or five apprentices is disappearing in favour of the employer of forty, or four hundred, or four thousand hands, and the odds and ends of technical knowledge, formerly picked up in a shop, are not and cannot be supplied in the factory. The instruction formerly given by the master must therefore be more than replaced by the systematic teaching of the technical school."

Of equal weight is the opinion of Sir Lyon Playfair. This gentleman says: "In former times all industries were taught by apprenticeship, which really afforded a good technical education suited to past periods, when industries were carried on by rule of thumb, and not on scientific principles. Science has in recent times produced so many applications, that the modern manufacturer stands at a great disadvantage when he is ignorant. It is only when he sees the labour market changing from places which neglect to those which promote efficient technical education that he awakes to the new conditions under which new industries are carried on. While Coventry and Spitalfields were losing their silk industries, the town of Crefeld, in Germany, was spending £215,000 on its lower schools, and £42,500 on a special weaving school. It has doubled its population and quadrupled its trade, and now sends to us as imports the silks which we have lost by a failure of our own industries. All the nations of Europe, as well as the United States, are vying with each other to promote technical training, and they are spending vast sums from national resources in order to get ahead of each other in the race."

Technical education being thus important, it is satisfactory to find that although Englishmen by no means adequately appreciate its value, and although the institutions for supplying it are in no way numerous, they have yet already been established in various parts of the country, and the movement in favour of their increase and multiplication is rapidly growing in breadth and intensity. The following are the principal technical schools available to students:—

The City and Guilds of London Institute; the Finsbury Technical College; the Normal School of Science, South Kensington, and the Royal School of Mines, which is affiliated therewith; the Technical Departments of King's College and of University College, London; the Technical Department of Owen's College, Manchester, of University College, Liverpool, and of the Yorkshire College, Leeds; the Durham College of Science; Firth College, Sheffield; Mason College, Birmingham; University College, Bristol; and University College, Nottingham. Information about these institutions can be obtained from the secretaries. It is to be noted that in connection with nearly all of them evening classes are established, so that young people who cannot arrange to go through the regular course may educate themselves during their apprenticeship.

A mistake very often made concerning technical schools, is that parents expect too much from them. They imagine that when a youth has passed through the Technical College and obtained a certificate, he will already be qualified as an engineer, and may be expected to earn his living. This, however, is a mistake; and technical schools will be more useful when their position is understood. They give a knowledge of the science of industry; after the student has passed through them, practical skill has still to be acquired, and this must be gained by the intending engineer being either apprenticed or artied to a contracting firm.

At present we are in a transition state with regard to Technical Training, and the large contracting firms do not assume a uniform attitude towards the technical schools. Consequently certificated students have frequently difficulty in gaining a position. A great many firms still demand as high a premium from the student as would be required from the novice, and naturally parents who have spent money upon the college course, do not see the reasonableness of the demand. It is, however, a matter of experience that the young men who pay high premiums do not by any means succeed the best. Workmen look askance at premium apprentices or artied apprentices; they regard them as fine gentlemen, and put opportunities of gaining practical skill out of their way. Thus the premium apprentice is

tempted to be idle, and if he is not very energetic and high-principled, he runs a risk of knowing very little more when his term has expired than he did when it commenced. If he can obtain a situation, it is far better that he should "rough it," as the term is: enter service as a shop apprentice, and thus learn the practical part of his trade. His life will be hard, but he will gain the benefit in the long run. His theoretical training will prevent his becoming a mere "hand," by giving him an intelligent idea of the whole scheme of work; and he will be ready, when his apprenticeship is over, to take any situation that offers. As to his future prospects, employers are usually glad to retain in their works young men of real ability who have been apprenticed with them. Such men will probably have to be content with a small salary at first; but their ability, combined with perseverance, is almost sure to enable them to rise, and their "chances" as engineers are only limited by the limitations of the splendid profession to which they belong.

Architecture as a profession is generally regarded with great favour by parents who are on the look-out for a "gentlemanly" career for their sons; and remembering how many buildings of every description there are in course of construction, we cannot wonder that it is supposed to afford abundant scope for energetic able workers. Nevertheless, it brings disappointment to the majority of those who enter it. Undoubtedly, large fortunes are made in it, and individuals who succeed in making their mark obtain valuable prizes. Yet there is no career in which it is more difficult to step out of the ranks, and the prizes obtainable in the ranks are very meagre. As an architect's assistant, a man has to be very able and very industrious before he can make £200 a year; while the man who has passed his examinations, and becomes an Associate of the Royal Institute of British Architects, and commences business on his own account, needs to possess influence and patience if he hopes to make his way.

It has been said by an authority that an architect is an engineer, *plus* an artist. Quite as much as an engineer, the architect needs to have technical training, and he can obtain it at the same schools. After leaving these schools, it is usual for the would-be architect to be artied for a term of years to an architect in practice. He will in all probability have to pay a premium, which will vary considerably in amount, depending upon the standing of the expert to whom he attaches himself. Five years is the usual period assigned, although many architects considerably reduce the period to apprentices who have enjoyed a technical training.

There are three examinations which have to be

passed before young men can become Associates of the "Royal Institute": the Preliminary Examination, the Intermediate Examination, and the Final Examination. The first two are intended for apprentices, the last is for those who have completed their apprenticeship and commenced practice. After being in practice seven years, an Associate becomes a Fellow of the Society. Various scholarships and medals are offered for competition, and a list of the same, with fees, &c., is obtainable on application to the Secretary of the Institute.

An architect of repute, Mr. Robins, member of the Board of Examiners of the Royal Institute of British Architects, has thus described the duties of an architect, in a magazine called *Parents*. Mr. Robins said:—"The business of a contractor or builder must not be confounded with that of an architect. The architect conceives his design and illustrates it in drawings to a small scale, giving details to a larger scale, and all mouldings and carvings full size, with a detailed description of every part of the work, under the headings of the different trades. He then schedules every bit of material contained in the building, measuring every portion, and preparing a bill of the quantity of the materials and of the labour comprised in the work to be done. To this the builder adds his prices, and gives his estimate for the completion of the work within a stipulated time.

"The architect superintends the builder during the progress of the work, and certifies what money is due to him as it progresses, and finally settles the accounts on the completion of the building, in which work he is usually assisted by a measuring surveyor, and by a resident clerk of the works. The architect is also the arbitrator, seeing justice done by the builder to the employer, and by the employer to the builder. His responsibility is enormous, and extends not only to the plans he provides, but to the works he superintends. He must not only be able to describe and draw the details of the work, but he must know whether they are well executed, both as regards materials and workmanship. He must, therefore, be not only well versed in the history and characteristics of every phase of architectural development, but also must be so well acquainted with the arts by which his designs are to be realised, and the sciences underlying the whole, that his client may be able to yield him entire confidence."

Accountants.—The business of accountants and auditors is by some said to be *the* business of the future; and there is no doubt that in these days, when so many companies are started only to be wound up, and when so many complicated Dr. and Cr. accounts have to be kept, that accountancy offers

a wide field for the energy of those who have the knowledge of figures needed for it, and the order and method which are its essentials.

Parents who intend their sons to become accountants should take steps to ensure their being made members of the Society of Chartered Accountants. The first thing to be done to this end is to let the youth be articled to a member of the Institute. No one can become an articled clerk who is not over 16, and who has not passed the Preliminary Examination or obtained a certificate of exemption. The Preliminary Examinations are conducted wholly in writing, and embrace the following subjects:—1, Writing from Dictation; 2, Writing a short English Composition; 3, Arithmetic; 4, Algebra to Quadratic Equations; 5, Euclid (the first four books); 6, Geography; 7, History of England; 8, Latin, Elementary; 9, in any two of the following subjects, one of which must be a language—Latin, Greek (ancient), French, German; Physics, Chemistry, Animal Physiology; Electricity; Magnetism, Light and Heat, Geology; Higher Mathematics.

The applicants who may be exempted from this Preliminary Examination are (1) Graduates of any University in the United Kingdom; (2) Persons who have passed the first Public Examination before moderators at Oxford, or the previous examination at Cambridge; or the Examination in Arts for the second year at Durham, or one of the Matriculation Examinations at the Universities of Dublin or London; the Preliminary Examination of the Victoria University, Manchester; the Moderations Examination at St. David's College, Lampeter; the Examination of the Oxford and Cambridge Schools Examinations Board, or the Examination for the first-class certificate of the College of Preceptors, or the Oxford or Cambridge Local Examinations.

Articles of clerkship must be registered at the Institute of Chartered Accountants within a month of execution. No articled clerk may during his term of service, except by permission of the Council of the Institute, engage in any other business or occupation. The premiums paid on articles vary. Sometimes they amount to £500 or £600. Occasionally also an arrangement is made that they shall be returned in salary. The stamps required for the articles are 2s. 6d. if there is no premium; 5s. for every £5 or fractional part of £5 of premium.

There are in London and other large towns Accountants' Students' Societies, which provide libraries, lectures, coaching classes, and other helps for articled clerks.

The Qualification for an Associate.—Two additional examinations have now to be passed before the articled clerk can become an Associate of the

Nevertheless, when we see the hundreds of volumes of every description which issue from the press, the scores of magazines and newspapers which are published, it is evident that large numbers must be occupied in this way; and as it is not likely that writers will write for nothing, it is certain that very many must be earning money by literature. Therefore to an extent Mr. Payn must be right. The question is, How are young *littérateurs* to gain a footing?

There are two or three mistakes constantly made about the literary calling which should be discarded before progress can be made. One is that "Authorship," "Journalism," &c., are perfectly easy; and that persons who have failed in everything else can take up novel writing and magazine writing without any difficulty. Another is that the chief requisite to literary success is to get a personal introduction to an editor. With regard to the first mistake, the truth is that an author requires to be trained as much as an engineer needs to be trained. One or two great souls there may be who can dispense with training, and who can produce books which at once command attention and remuneration; but these people are very exceptional. Indeed, the probability is that if we knew their private history we should discover that they, like the rest, had to go through the mill. The training required in the literary calling is practice. The pen of a ready writer belongs to a person accustomed to writing.

With regard to the second mistake, personal introductions to editors are of very little value. They seldom lead to a book being published, or an article being accepted, unless the book or article is in itself worth money. Undoubtedly they may prevent a book or an article being overlooked, and they may secure for the same kindly criticism; but the advantage thus gained would not affect more than the one MS. accepted: it would never open a career for a boy; while if his work were not worthy it would perhaps be better for him that he should fail in the beginning than that he should be encouraged to persevere in a mistake. After all, editors are very much like other merchants. They are willing and glad to buy material which is likely to pay; they are not willing to burden themselves with writings which the public will not care to read. They do not pursue their calling from motives of philanthropy; they look upon it as a career by which they make their living, as the author hopes to make a living by his work, and they cannot afford to be the relieving officers to genius. If would-be writers have anything to say which the public will read: if they give information which the public needs and will buy: if they can tell a story in an interesting way, publishers will gladly buy the work thus presented to them; they

will not need that the author should be introduced to them.

When young people show an aptitude for work of this kind, it is worth while for parents to have them trained to the literary calling, to give them a thorough education, let them study English and foreign literature, and let them perseveringly practise composition until it is quite easy to them. But even with these advantages, unless they are unusually gifted, it will be prudent to regard literature as an auxiliary rather than as a permanent means of livelihood. Those who trust to literature from the beginning, hoping to make bread and butter by it, generally have to pay dearly for their daring.

Reporters.—One of the side paths of literature is reporting for the newspapers, and a great many young men now make a living in this way. The first requisite to success as a reporter is skill as a shorthand writer. This can only be acquired by continuous practice. There are many boys who learn to write shorthand at school, and who attain proficiency in it, who would be quite unable to report a speech. One hundred and fifty words a minute is the speed required in the Reporters' Gallery of the House of Commons, although, as an actual fact, one hundred and twenty words a minute is the usual rate. Members of Parliament who wish to be reported verbatim take care not to gabble. Two hundred words per minute has been done.

Apart from shorthand, the would-be reporter should have a good memory, quick perception, and the power to describe events and scenes forcibly and vividly. He should cultivate terseness and lucidity, for nothing tells against successful reporting so much as verbosity. Familiarity with good books also will improve his style, and be of the greatest assistance to him. As a beginner, a reporter might expect to earn from 20s. to 30s. a week. After a few years' practice he might earn £5 or £6 a week. The chief advantage of the employment is that it frequently opens the door to journalism.

Music and Art.—To say fifty years ago that a man was a musician or an artist was tantamount to saying that he was an adventurer, that he lived by his wits, and might be expected to borrow money of those with whom he came in contact. This reproach has entirely passed away. The fields of musical and artistic employment have been widely extended, and are now exceedingly productive, so that numbers of honoured members of the community are gaining their living therein. In music, it is true, the variety of employment is not great. Musicians must be either performers or "professionals," or teachers, and although in both

these directions good incomes are obtained by those who make a name for themselves, it has to be confessed that the individuals who have not achieved celebrity have very often to struggle hard for a livelihood. In art, however, openings for remunerative occupation increase every day. Of course the highest successes must be reserved for genius; but yet, apart from the highest successes, there is abundant room for faithful and profitable art work. The following are only a few of the ways in which artistic power can be exercised:—Painting landscapes, portraits, &c.; decorative work of all kinds; designing in all its branches; book illustration; modelling and teaching, both public and private. In every branch of trade there is every day more and more demand for artistic work, and the prospects in this direction are very hopeful for individuals who enter upon the work wisely, and who pursue it in the right way.

If musicians and artists are to be successful, they must have fulfilled two conditions—they must have a natural talent and liking for their employment, and they must be thoroughly trained from the beginning. To these conditions a third might be added, and that is that the training must commence very early—the earlier the better. Unless all these conditions can be fulfilled, to choose music or art as a career would be to court failure and disappointment. Some parents have an idea that the natural talent is unnecessary: that all are to an extent gifted: and that cultivation can develop capacity in those who show no sign of it. This is a mistake. Through lack of education, talent is often wasted; but the education is wasted when the talent does not exist.

The first step, therefore, which parents should take before deciding to let their children adopt an artistic or musical career, is to be sure that the faculty exists; and on this subject it would be prudent to take the opinion of a practical expert. The favourable judgment of relatives and admiring friends is not worth much; and it would be indeed a pity to spend the valuable time, lasting over many years, required for a course of study, unless the career to which it led was congenial.

The talent being assured, the training must next be considered. Here it is well to consider music and art separately.

Educational Institutions for Music.—

Royal Academy of Music, 4, Tenterden Street, Hanover Square, London.—There are three terms in each year. Admission by examination at commencement of each term and half-term. All branches of music are taught, and students may choose any one of these for their special study. Several scholarships are offered for competition. The Royal Academy of

Music holds local examinations in instrumental music and singing, harmony, and counterpoint, at any place where twelve candidates present themselves.

Royal College of Music, Kensington Gore, S.W.—President, Prince of Wales. Three terms each year. Admission by examination. Entrants must possess the educational and physical qualifications necessary for the class of study which they are intended to pursue. Several scholarships and prizes are offered for competition, and these entitle the holder to a thorough and systematic free education. Certificates of proficiency are given to students educated in the college, and those who pass the requisite examination bear the title of Associate of the Royal College of Music (A.R.C.M.).

The Guildhall School of Music, Victoria Embankment, London. All branches of music taught by high-class teachers. Students are nominated for admission, and the nomination must be signed by an alderman or member of the Court of Common Council of London. Several scholarships are given.

Trinity College, Mandeville Place, Manchester Square, London, W. Certificates and diplomas are granted to successful students, and exhibitions and scholarships are offered for competition.

The Society of Arts, John Street, Adelphi, London, holds examinations in music at centres all over the country for first, second, and third class certificates. Local examinations in practice of music, vocal and instrumental, are also held at certain provincial centres and in London once a year for first and second class certificates, and for honours.

Particulars of the latest arrangements as to fees, time of examination, scholarships, and other details, can be obtained from the secretaries of these various institutions.

Educational Institutions for Art.—Some hundreds of art schools are established in different parts of the country, and information concerning them can always be obtained at the school in each district. In connection with the Science and Art Department of the Committee of Council on Education, schools are open both in London and the provinces. In these instruction in anatomy, architecture, perspective, and drawing from life is given by certified teachers, and day classes and artisan night classes are held frequently at stated times. The Department gives grants to art schools upon examination. Besides the national schools of art, the following institutions are available:—

- The National Gallery (for copying pictures). Application to be made to Charles L. Eastlake, Esq., Secretary.
- The British Museum (Drawing from the Antique). E. M. Thompson, Esq., Principal Librarian and Secretary.

The above have no professors attached to them for giving instruction. Students simply practise by themselves.

Royal Academy, Burlington House, Piccadilly. F. A. Eaton, Esq., Secretary.

The Artists' Society, All Souls' Place, Langham Place, Regent Street. Charles Cattermole, Esq.

No Professor. For Study only.

The Slade School, University College, Gower Street. J. M. Horsburgh, Esq., M.A., Secretary.

The Herkomer School, Bushey, Herts. The Secretary.

St. John's Wood Art School, Elm Tree Road, St. John's Wood. The Secretary.

Paris.

Julien Studios. C. Carter, Esq., 12, Rue Blene, Paris.

Carlo Rossi's Studio. C. Carter, Esq., 12, Rue Bleue, Paris.

Private.

W. P. Frith, R.A., Ashenhurst, Sydenham Rise. W. P. Frith, Esq., R.A.

Sir James D. Linton's School for Water Colours, 5, Cromwell Place, South Kensington. The Secretary.

Hubert Vos' Studio, Vauxhall Bridge, S.W. Hubert Vos, Esq.

Agriculture.—Agricultural pursuits have of late years been spoken of as unprofitable, yet large numbers of persons are employed upon them, and make their living by them. It is, however, worth noting that the persons most likely to succeed in one of the many departments of agriculture are the persons who best understand the subjects associated with the profession. Parents, therefore, who wish their sons to become Farmers, Land and Estate Agents, Factors, or Stewards, either at home or abroad, should be as careful to have them trained to their business as would be considered necessary if they purposed to become Artists or Surgeons. The surest means for obtaining this training would be to send the youths to an agricultural college for a couple of years. Here they might study systematically the science of Agriculture and the various sciences associated therewith. The most celebrated of these colleges is the Cirencester Royal College, of which the Prince of Wales is patron. Students who pass successfully through this college obtain a diploma and become members of the college. The expense of this training is about £135 per annum, but application must be made to the Secretary for information concerning fees, regulations, &c.

Clerkships.—A most unfortunate result of the despondency which too often lays hold of parents called upon to choose a career for their sons is that such large numbers of boys aim only at becoming "Clerks." An ordinary clerk's work can be done by any one who has been fairly well educated, and who has average ability; it requires no technical training and no special skill; consequently, it is the opening first thought of by parents whose sons are able, industrious, and well educated, and who do not find it easy to start them in any special career.

The worst of an ordinary clerkship, however, is that it seldom leads to anything worth having. It is moderately well paid at the commencement, but it is routine work; and the man who has been at a clerk's desk for forty years is not very much in advance in capacity and experience of the youth who has done clerk's work for twelve months. It would be well if parents who are called upon to place their boys could realise the truth that for the most part clerks are overworked, badly paid, and, worst of all, that if they fail they can be replaced at any moment by the crowds who wait to supplant them. If a merchant is in want of a clerk, and advertises for the same, applicants appear by hundreds, and the capacity and skill of the majority of these applicants to perform the duties of the vacant situation are so equal that it is most difficult to select a candidate. Yet the career of a clerk would be more honourable and more lucrative if it were not so commonly chosen. The pity of the situation is all the greater, because probably the reason why clerking is so generally followed is that it requires no special training, and is very easily taken up. Parents who are wise enough to take a little pains to select a career for their sons seldom make clerks of them; they give them a special calling, put a trade or a business into their hands, and thus arm them for the battle which has to be fought.

While urging these facts, it must be acknowledged that boys frequently enter large establishments as clerks, and in this way learn the business which ultimately becomes their own. There are certain offices, such as ship-brokers' offices, merchants' offices, &c., in which the only way to obtain a footing is to enter as clerk; yet individuals who make their mark in these positions are on the high road to fortune. The fact is that the term is a comprehensive one; it may mean almost anything, and also, unfortunately, it may mean almost nothing. The way to prevent its being nothing is for the young clerk to resolve that he will not remain a clerk; and to this end learn his business and aim at making himself useful, and even indispensable. If he pursues this course, the time will be almost certain to arrive when promotion will come in his way; and if then he avail himself of his opportunity, he may gain a fair position in life. But if he does his work in a perfunctory sort of way, performs what is required and no more, and is indifferent what becomes of the business so long as he avoids difficulty on his own account, he will settle into a groove, and all prospect of improvement will disappear.

Bank Clerks are amongst the members of the clerking fraternity who have a recognised position, and who, as a rule, are fairly well paid, although of

course the remuneration varies with the standing of the different banks. The clerks of the Bank of England, for example, have quite a unique position, and the *employés* of the long-established banks have abundant possibilities of advancement before them.

Banks offer decided attractions to young men who are about to commence their commercial career, and one of the chief of these is the commencing salary, which is usually on a more liberal scale than that offered to beginners in other fields. There is always a prospect also of a gradual but steady rise in salary for bank clerks; so that a youth, without making a special effort, can look forward to the time when he will be in the receipt of a comfortable though moderate income. His duties, too, will be of the sort known as "eminently respectable;" he will not have to face manual toil in connection with them. On the other hand, his duties will be very monotonous, very wearisome; and, as a man of genius who was a clerk once described the situation, he will be in danger of "growing to the desk while the wood enters into his soul."

Bank clerks are usually nominated; therefore, in order to gain the position, it is necessary to have interest with a member of the firm or with some other influential person. A few banks there are—and it is possible that the number will increase—which throw open the junior situations in their establishments to individuals who can pass an examination, and who, during a period of probation, give satisfaction to the managers. The examination is not difficult to young men of intelligence who have had an average good education. Even nominated candidates are usually expected to pass an examination before they are finally approved.

On the whole, it may be stated that the estimate formed of bank clerking as a career depends largely on the character of the candidate. To a young man of good education and gentlemanly appearance, who keeps accounts accurately, who writes a good hand, and is steady and reliable, the position is eminently suitable. Such an one would have work to do which would last his life, and he would expect that his position would gradually improve until it was fairly comfortable. But to a young man of energy, enterprise, ambition, and special ability, bank clerking would be torture, and to enter upon it would be to dwarf his faculties and make him a disappointed man.

Railway Clerks.—Another position which is honourably recognised in the clerking world is occupied by individuals who are in the service of the great railway companies. Many thousands of persons are employed as clerks by these companies, and the employment is worth looking after, because it generally happens that the more lucrative and important posts of the service, of which there are

many, are recruited from the ranks of clerks who are familiar with the routine of the work, and who have gained a character for efficiency and honesty by devotion to duty.

Railway clerks are usually admitted when young (from sixteen years old and upwards), and generally they have to pass an examination before being appointed, which examination is not very difficult. The subjects in which a candidate is examined are reading aloud, writing from dictation, and arithmetic—simple proportion and decimals. It is worth noting that shorthand writing is now much used in the service. A knowledge of shorthand writing is therefore a great advantage. Salaries are given according to age. The salary would be small to begin with, but it would be gradually increased, and merit would be almost certain to be recognised and rewarded. Some time ago a railway official well acquainted with the service declared that he had never known an *employé* interested in the welfare of his company who failed to gain the promotion which his attention to his duties deserved.

Trades and Manufactures.—The number of trades and manufactures carried on in this country is so great that it would be impossible to attempt to give information concerning them. Each trade and manufacture has its rules, and sometimes these vary in different localities. The only thing that a parent can do who has a boy whom he wishes to place in a particular trade is to inquire in his own neighbourhood of individuals occupied therein, and able to inform him. It is most important, however, that these inquiries should be made betimes. In the majority of trades youths are "bound apprentice," as it is called, in order that they may learn their trade, and regulations laid down by the trades' unions have to be observed. These regulations are occasionally somewhat arbitrary, but it is so great an advantage to a boy to enter a trade in the recognised way, that it is foolish to attempt to disregard them. In many trades fourteen is the age fixed for the commencement of apprenticeship, and this makes it necessary that terms should be settled and arrangements made some months beforehand. Professional pursuits are much sought in these days, but again and again it has been found that a comfortable competence could be earned with much less effort and much more quickly in trade than in a profession; and the father who "puts a good trade into his son's fingers" has done him no slight service. At the same time, before adopting a trade the parent should carefully consider its suitability for his son's health and capacity (see the previous article for these points); also the prospects of future success which will attach to it when the time has come for the

intending apprentice to commence business on his own account. It is a great mistake for a parent to be regardless of the future when establishing his son. For a youth without responsibilities, and with no one but himself to provide for, the wage paid to an ordinary workman which would be awarded to an apprentice might seem abundantly sufficient; but to a man who had others dependent on him, such a wage would be very inadequate. By all means, therefore, let the parent choose a trade for his son with possibilities belonging to it.

Colonial Life.—Emigration to one of the various colonies which are under British rule is an opening much in favour with British youths with a turn for adventure, and with no liking for close application to books or desks. The career is full of promise for boys who are fit for it; and hundreds of Englishmen have won honour and fortune for themselves, and have advanced the interests of their country in this way. Englishmen are the best colonisers in the world, and there is every ground for believing that their work in this direction is by no means accomplished.

No one who had the good of his fellows at heart would say a word against strong and capable young men commencing life thus, but parents ought to give them due preparation for their work. In all callings training is regarded as indispensable to success, and the colonial calling is no exception to the rule. It is a cruel thing to send a young man—one who has perhaps been cared for and guarded in every way at home—to “rough it” in a strange land, without educating him to face the difficulties which it will be his business to surmount, and without preparing him for the struggle he will have to make against Nature. Many a young man has failed, and has then been blamed for his want of pluck or perseverance, when the blame rests with those who have recklessly launched him into such a life.

Some years ago Major General Fielding published an article in the *Nineteenth Century*, entitled “What shall I do with my Son?” and another, some months later on, “Whither shall I send my Son?” in which he insisted strongly on the duty of parents on this point. He declared that in most cases parents and guardians consider that they have done sufficient and what is right for a youth if they procure a dozen letters of introduction to colonial magnates—to men who have made their pile, as it is termed. What, however, they ought to do is to educate the intending colonist so that he will be able to make his own way.

The results of this education should be to train up the lad a thorough gentleman, and complete master of the English language; also he should understand the theory of farming, and know the

laws which govern the rotation of crops. He should be able to use the plough, to drive teams of oxen or horses, and to repair agricultural implements. He should understand the management of oxen, horses, and sheep; should know how to construct rough timber bridges, dams, and tanks; should have a knowledge of rough surveying and levelling, carpentering, and building. He should have an intimate and practical acquaintance with the many arts and contrivances likely to be useful, such as cooking, the curing of fish and meat, the preparation of hides, and the use of tools; he should know how to keep accounts, and, in addition to the above, he should know enough of the sciences of geology and mineralogy to enable him to recognise the proximity of coal and other minerals likely to be found.

An education of the sort described would of course be most easily obtained at a colonial or an agricultural college, and it is very evident that the youth who had obtained it would be far better fitted to succeed as a colonist than would be the youth who had had no such training. If, in addition, the parent would take pains to acquaint himself with the peculiarities of the colony that is preferred, so that the future inhabitant may know what is required of him and what he requires, his prospects of success will be fairly assured.

These, then, are the chief of the careers most readily available to the youth of the present day. In conclusion, it may be useful to repeat the advice given by one of the most successful of American millionaires to a parent who was about to choose a career for his son.

“A young man just starting in life should choose that occupation or avocation for which he has the most decided preference. Many a man has ‘his nose to the grindstone,’ so to speak, throughout life, simply because he has chosen, or his relatives or friends have chosen for him, some business or profession for which he is not adapted, and which he finds is not congenial to him, while in a career for which Nature and education had fitted him he might not only have been happy and successful, but might have made his mark as a star of the first magnitude.

“The Good Book tells us that whatever our hand finds to do we should do it with all our might; but a young man is not inclined to do in that way things that he does not like. But whatever young men do voluntarily from choice, they as a rule do well. It is therefore very important for a young man just starting in life to be sure that the calling in which he engages is thoroughly congenial to him, and one in which he can put forth his best efforts with the greatest enthusiasm and delight.”

HOBBIES.

HOBBIES have a decided tendency for good on the well-being not only of the young but of the old. Time hangs far too heavily on the hands of some of us, both in the country and in town; we cannot be always playing stated games in our spare hours, nor constantly giving even our spare time up to "amusement" pure and simple. Nor can we always be exercising our brains in serious study of the sciences. Now hobbies, such as we are about to recommend here, occupy the middle distance betwixt study and amusement, and they are useful in a variety of ways, more especially for young people, and later on for middle-aged and elderly people. Many and many a youth has been started on his upward path through life by the adoption of a hobby. It has filled up his spare moments; it has kept him from temptations out of doors, and given him something to think about at home indoors. It has kept his mind from preying upon itself, so to speak, and killed that deadly weed of "self-consciousness" which at a certain period of every youth's existence takes root in his being, and may, if not destroyed, grow up into a very obnoxious and troublesome plant indeed.

Many a hobby adopted in youth may be found of benefit in after-life. Suppose a lad has learnt to use tools: the struggle for existence is becoming greater every day, and no one can ever be the worse for having learned an honest handicraft—say, that of carpentry or joinery. On the contrary, if a young man has to go abroad to a new land to make his living—perhaps even pioneering—he will find the hobby of his youth become one of very great utility indeed. Almost any hobby teaches business habits, and instils into the mind that sort of ambition which no one need be ashamed of—the ambition to excel.

But still more, in later life, when cares press and yet actual occupation may diminish; when children leave the home, and quieter times settle down around one; then a genuine hobby—a pursuit in which one can for a time find absorbing interest, and which may furnish stimulating intercourse with others who have the same tastes—may be of incalculable benefit. It finds one occupation; it finds one pleasant intercourse and communication; it finds one reading with a purpose in view; and these things may be as the wine of life to people in later middle age. Hobbies have helped many an octogenarian to enjoy life and be a blessing to his fellows to the very end. Then, again, how a hobby may alleviate disease and pain, no one but a sufferer knows. We knew one such, subject for the last ten years of his life to a painful disease which could only have one ending, who found at first solace and distraction,

and, later, even some measure of pecuniary support, from the preparations of the most exquisite botanical slides for the microscope; and another, a medical man, with a strange gentleness of manner, due to life-long pain, often amounting to agony, who frequently found relief, and sometimes even forgetfulness, in the mental absorption required by the delicate manipulations of high-class photo-micrography.

Still again, such pursuits *broaden* a person's character and nature. It is pitiable to see how some men seem to get totally absorbed in the mere business of making money. Gradually their business, though it may not claim in reality their time and effort, usurps more and more of their thoughts, till at last they seem able to care about nothing else, save occasional excitements of a more or less questionable kind. Try and have *something* to care about, and follow up besides that, else the time will surely come when the want of such an unselfish interest will be sorely felt.

No wonder it often becomes a hobby with some, especially the lonely ones of this world, to keep pet animals. This is exceedingly natural. The mind of mankind revolts against loneliness. Want of sympathy is a depressant which very slowly perhaps, but very surely, ages one and saps his life away. Would Alexander Selkirk (Robinson Crusoe) have been able to support existence so long on that island of his without the society of his animal pets? Companionship is necessary for life, and there is many an old bachelor or poor woman, whom poverty obliges to stay at home, who would be very wretched indeed were it not for the solace that some faithful dog or cat is to them.

Girls or young women with a little spare time on their hands have many pursuits open to them—such as music and drawing, or painting—which can scarcely be considered hobbies, though sketching in colours out of doors, steadily pursued, would certainly come under our heading. This last is a very exhilarating pursuit, only it entails a great deal of study, and much careful and thoughtful examination of the work and method of good painters.

But, apart from all these, there is no reason why girls should not adopt many hobbies that boys usually delight in, and some of which we may now mention; the sterner sex being as a rule less addicted to lighter accomplishments, and the want of really distracting occupation being, therefore, by them chiefly felt.

The Workshop.—Give an intelligent lad an out-door room, where he may work at this hobby, and we make a man of him at once, for he will soon work

up to the standard he has set himself. Long before a boy has thought of any of the more learned or gentlemanly occupations or professions, he takes, as if by instinct, to the manufacture of articles of utility. This is as it should be, for the lad who can turn out a small wheel-barrow, a go-cart, or even a stool or chair, has well-balanced brains in his head, which the manual labour and thought expended in his work-room tend to strengthen and train. It is best to give him a chest for tools to begin with, but let it be empty. The tools must be bought cheaply, and probably second-hand. This will not only teach him economy, but secure really good implements at the same time.

Let the boy then learn carpentry first, and if he can be put for an hour or two daily to a shop, it will be all the better for him. He may afterwards own a turning-lathe, and that is often the height of a lad's ambition.

Model Boats and Ships.—In this great maritime country the art of modelling boats or yachts from wood is greatly to be encouraged. With some boys this becomes quite a hobby, and we have known many who were so accomplished in the art that they not only made their own models, but many to give away—or, better still, to sell. The lad who essays this hobby, must have good wood, good tools—not toys—a good book of instruction, good models, and, lastly, a good head, with a considerable amount of industry as well.

Picture-frame making is a branch of workmanship by itself, at which even girls can do something, as the work is light and very engaging. The Oxford frame is by no means difficult to make, and whether it be of varnished wood and gilding, or simply of rough branches with the bark left on, it is exceedingly effective. Glass is very cheap, and so are really good engravings. These last can always be found in the pages of old magazines or periodicals; even the coloured pictures from such Christmas numbers as those of the *Illustrated London News*, *The Graphic*, and *Yule Tide* are very pretty when framed. Indeed, many of them are really works of art.

Fretwork is a delightful hobby, suitable even for girls; and the work produced may be made very useful in furnishing or ornamenting the home. This subject is, however, dealt with elsewhere.

Collecting Butterflies and Moths is what might be called a temporary hobby with many boys, though in exceptional cases it may become that of a lifetime. It entails most excellent health, giving exercise out of doors; and if one has an eye for Nature, he will hardly be content with simply studying the flight, beauty, and habits of the winged

creatures he catches, but will observe the trees and the wild flowers that grow and bloom everywhere in the butterfly season. Many are deterred from catching and killing *lepidoptera*, as scientists call them, from the notion that they give the creatures pain. Simply squeezing them on the thorax below the wings destroys life in many species at once, without disarranging the lovely wings; and naturalists are nearly all agreed that they suffer no pain at all, or scarcely any. However, there is another plan of killing the things with chloroform.

A very great deal of taste and skill are needed in getting up a cabinet of butterflies and moths, so that they shall be well displayed, and at the same time well preserved; but altogether the hobby is a useful one. A boy who takes to it will hardly stop here, however. He will take to stuffing birds and beasts next, or, in other words, to the art of taxidermy.

Taxidermy.—This is an art that will tax—no pun meant—all a boy's or young man's skill and energy for a time. But it is a very interesting one, and even as a pastime can hardly be beaten. The first efforts of the taxidermist are generally very crude indeed. Even his attempts to skin a bird or mouse prove in the first instance utter failures. Everything seems to go wrong together; but let him persevere, and it is wonderful how quickly genuine progress will be made, and before very long his father's study will be ornamented with a cabinet which both he and his son may well be proud of.

Every cabinet of either birds and beasts or of fishes should be a *subject* and a *picture* in itself. Everything about it must be natural—background, and foreground, and middle distance all complete. To be a really good taxidermist, it is well to not only study manuals on the art, but to take a few lessons as well.

Egg-collecting.—We hardly like to recommend the collecting of birds' eggs, as it often entails some considerable amount of cruelty to the birds. Besides, the law of trespass might be put in force against a juvenile poacher. If, however, boys were content to remove only one or at most two eggs from a nest of, say, five, but little harm would be done. Well-preserved eggs make a most beautiful addition to a cabinet. Stuffed birds and the tinier quadrupeds, with grasses, flowers, eggs, and butterflies, compose a most charming collection, if arranged with taste, and naturally.

Collecting and Rearing Larvæ is a kindred hobby, and a most interesting and instructive one. Moreover, such a hobby cannot fail to teach much natural history, for the intelligent lepidopterist will

soon find that almost every tree has some peculiar larva that dwells and feeds on it, and on vegetables of smaller growth as well, to say nothing of mosses and lichens. It is curious work, too, looking for larvæ; for they are to be found in all kinds of strange places, and often must be looked for at night by the aid of a lantern, or they will drop down into one's net when a tree is shaken or struck. Larvæ find harbour also, during winter and later autumn, in the ground, and under the loose bark of trees.

Collecting beetles is but another branch of the same hobby.

Photography.—The person who goes in for natural-history specimens, and walks a deal, will often wish he could take a picture of the lovely scenes he comes in view of. He may or may not be an artist, but *photography* is always open to everyone. The photographic hobby is one that is becoming more and more popular every year. New improvements, too, are being constantly made, and it is really surprising what pretty little pictures can be taken even by means of a camera that has cost only about a guinea. But we should think that a collector and setter-up of natural-history specimens—and cabinets always fetch a good price, if artistically got up—should soon be able to afford a better camera, and he could then study photography from a broader basis.

Photography is much practised nowadays by amateurs during walking or cycling tours. By what is known as the dry-plate system, pictures are by some cameras—detective, they are called—taken instantaneously; and one after another may be got, to the number of many dozens, by merely turning a roller. These need not be developed till the tour is finished, when either the amateur himself, or the maker of the camera, may complete the picture.

In a family of which one member adopts photography as a hobby, beautiful landscapes may be taken as lantern transparencies, which some clever sister can easily colour, to be used as slides by another brother, whose pet amusement is the magic lantern.

The Magic Lantern is a very delightful instrument indeed, calculated, if well worked, to give quite as much pleasure to young people as even music itself. The boy or girl who has thoroughly mastered "magic-lantern" work in all its branches, may even find it of practical use in after-life for lecture purposes, the lantern being now largely used for illustrating natural-history subjects, and many other branches of science. We cannot recommend the cheap child's toy-lantern. It is far better for a youth to save up his pocket-money until he can purchase a good one; or to help him to do so. Some-

times this may be got cheaply second-hand, but a very few pounds will procure a really good instrument nowadays.

Endless is the amusement that can be obtained in the home from the use of the lantern. It would, of course, belong to only one member of the household, and with every new set of slides—say, of scenery—it would be a capital intellectual exercise, if the owner would get up a little lecture descriptive of the places illustrated. Sisters might meanwhile discourse sweet music from piano or violin, to accord with the scene. For example, suppose it is a picture of Glencoe. Here we should want music of a martial nature at first, quickly changing to such sad old airs as "The Flowers of the Forest," or "The Auld House." Again, it might be some romantic picture of an Irish glen; here the music would be something combining both sadness and sweetness, something full of tears and mirth, like "The Meeting of the Waters," ending perhaps with "The Harp that once through Tara's Halls."

Different sorts of light are used in the lantern; but good paraffin will be found best for a room of ordinary size. The dissolving-view lantern is by far the most effective, and then, by a very simple arrangement, one view seems to fade away—or, rather, melt—into another; and this, again, gives an opportunity for a change of music from the sad to the gay, or *vice versa*. History can often be taught better through the medium of the magic-lantern and a well-got-up little lecture than from books themselves.

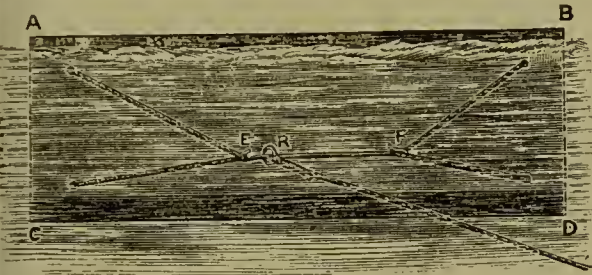
Firework-Making is a hobby with some boys. We would do all we can to discourage the practice. It is an eminently dangerous one as a family pursuit. Not only may a lad injure himself for life, but he may set fire to valuable property.

Kite Making and Flying.—This is rather a juvenile pursuit, and may not be such a useful hobby as some branches of mechanics; but, nevertheless, it is a pleasant one. It keeps a boy engaged in his spare hours, and takes him out and away to the breezy common or hillside, where he can spend many a delightful afternoon, and wax strong, tough, and healthy with the open-air exercise. This hobby does not necessitate any great outlay of pocket-money, for kites can be made very cheaply, although they are often expensive articles to buy. The shape of the kite must first be decided on, the skeleton made of light laths as the backbone, and the other portions of light cane of equal thickness throughout. A kite must not be lopsided. It is covered with paper, or, better still, with light calico.

An instrument for fishing, called in Scotland the "otter," is made on precisely the same principle as

the kite. It is much used in lake-fishing, where boats are not procurable, and it might be used also in sea-fishing, but not across the line of passing vessels.

As we have never seen it described in print, we give herewith a plan of the instrument. A, B, C, D, represents a piece of light deal board about an inch thick, nine inches wide, and about eighteen inches long. A piece of whip-cord is fastened through a hole near the edge at each corner. These bits of cord are about nine inches long, each pair forming a



SEA-KITE OR OTTER.

triangular loop at E and F, and from E to F is a strong straight iron rod. The arrangement of string and rod stands about six inches out from the board or otter. And on this rod a loose ring moves, to which the fishing-line, with its dependent tippets and hooks, to the number of perhaps a dozen, placed one yard or further apart, is attached.

C, D, is a leaden keel, to cause the otter to float perpendicularly, like a kite in the air. The fishing-line is wound round a reel or "pirl."

To work the otter, or water-kite, you simply place it afloat in the edge of the lake, and commence carefully to pay out the line as you walk along. The secret of its voyage through the water is this:—So long as you keep the ring to which your line is attached at the end, E, and your line tight with gentle force, walking slowly along the beach in the direction of D, the otter will move slowly out into the lake diagonally a long distance; but the moment you slacken the line, the ring slips back to F, and the otter rushes back too, disarranging your line until you succeed in getting the ring back to E. "Why not," it may be asked, "have it stationary at E?" Because the way to draw in the otter and many a burly trout is first to slacken your hand and let the ring slide down to F, then rapidly wind in.

Fishing is a very excellent hobby for the young. We are unwilling to believe that trout caught by the angler suffer much pain, but we always make a practice of bending the head of each fish backwards till the neck is broken before placing it in our fishing-creel.

There are days when, however promising the weather may appear, the fish resolutely refuse to be

caught, or it may be only certain hours of certain days when this state of matters prevails; we therefore advise anglers to go to the riverside with two strings to their bow. Let them take a nice book. If then the fish are sulky, reading can be enjoyed in the best possible way. Or the butterfly-net or botanical box may be taken, instead of a book.

Fishing is a hobby of a hundred delights. Whether the sport is carried on by riverside, or winding brooklet, or on the quiet, heaving sea itself, it is one that never palls, and clings to one till late in life. One may tire of shooting; even one day on the hills has been known to be too much for a delicate constitution; but fishing can hardly weary anyone. It is a pleasant and contemplative occupation too; and the dweller in the country who knows nothing about its calm enjoyments, is unkind to himself, to say the least of it. Within easy reach of London there are many pretty little streams, such as the Loddon and Kennet, near Reading, where fish are very plentiful. Here, when weary of business in town, making his headquarters at some cosy wee inn, one can, for a few days, enjoy a life which is all but idyllic.

Pet Stock.—Of all the hobbies of country life perhaps the most common and engrossing nowadays is the keeping and rearing of what we may call, for want of a better name, pet stock. The shows now held all over the kingdom of poultry, pigeons, rabbits, birds, dogs, cats, and even guinea-pigs and cavies, have done a vast amount of good in encouraging the breeding of such animals. But apart from the hope of showing at such exhibitions, and winning prizes and cups, pet-stock breeding may be gone into for the mere love of the hobby.

Regarding poultry, no home in the country is complete without a few. There is always some one or two members of a family who will gladly take charge of the fowl-house and run, if only for the sake of gathering the eggs. A boy it may be, just as often as a girl; only whoever does so must be a stay-at-home for the time being. Not all day certainly, but he should be about morning, noon, and in the evening, for there is quite a deal to be done to keep fowls healthy and laying; only this work is easily reduced to a minimum by regularity.

Looking after a few fowls properly, especially if they are of good breeds, is one of the best hobbies a boy can take up. The good he derives from it is not easily calculated. He takes quite a fancy for his stock, studying their points and properties. He learns the secrets of breeding, and this, if he is to become a farmer or country squire, may end in his being able to breed good horses, shorthorns, or sheep. He learns the value of perfect cleanliness in

its relation to the keeping in health and comfort of all animals; cleanliness of bedding, food, water, the runs or exercise-yard, and the house where the stock sleeps at night. He will keep a note-book and little ledger, and so credit or debit his stock with every profit or outlay, as to be able to strike a balance at the year's end; he is thus learning habits of business that are invaluable. Moreover, he must be a bit of a mechanic, a cunning hand at carpentry, to mind the fowl-house or stop a leak, and a wire-worker as well, to keep the run in order; and he must at the same time get some knowledge of the sciences of ventilation and disinfection. But there is something over and above all this which he will learn, for his intercourse with the inmates of a fowl-run will bring him into a closer relationship with Nature, as he studies the tricks and manners of his feathered pets.

The keeping of pigeons, again, has much to recommend it as a hobby—for boys at all events; though their sisters ought to be taught to look after the welfare of the loft in their unavoidable absence. Pigeons are far more independent, as a general rule, than poultry, and the young are fed by the parents, while to a great extent chickens are dependent on hand-feeding. If we get good healthy stock to commence with, have a good safe place to keep them in, have everything kept dry and clean, the hoppers never empty of wholesome food, nor the fountains of pure, clean, soft water, and suppose we see that the loft never becomes over-crowded; then, as a rule, there really is little else to be done.

The keeping and breeding of good fancy *canaries* is a hobby that entails more trouble than the pigeon fancy. It is one that may well be relegated to the care of the female members of the family, as they are sure to be about all day, and can always keep an eye on the bird-room. We do not advise any member of a family, however, to adopt canary breeding as a speculation, although it is a hobby by which no one need lose money.

It is often a hobby with boys to keep rabbits, but as a rule the lads neglect them so much. There is no healthier domestic animal than the rabbit, if well fed and attended to; but no one should keep a rabbit, or indeed any animal, until he has first made himself acquainted with its habits and requirements. Manuals giving all information may be bought from a shilling upwards.

Squirrels also make nice pets.

Silkworms are more of a children's hobby than a boy's. We have nothing but good, however, to say of this or of any other fancy, which tends to enlarge the mind, and give new ideas.

Gardening.—This hobby, once well taken to, is one of the best. It is a lasting and notoriously

healthy one. There is no reason why it should not be made to pay. There is some expense certainly in laying out and stocking a kitchen and flower garden at first, but after that it should pay its own way.

Gardening is an occupation which requires a good deal of study; indeed, it is almost a science in itself. But the study is of a most pleasant and peaceful nature; and that soul must be devoid of all true sentiment who cannot take delight in the growth and beauty of flowers and vegetation. The amateur gardener should be skilled in the building and stocking of rockeries and outdoor fern-growing; he should be able also to make trellis-work and window boxes. Climbing plants are much cultivated now-a-days, and so are window gardens. Both, if well cared for, add vastly to the beauty of the country or suburban cottage, and make it infinitely more home-like. The beauty of gardening as a hobby is, that there is always something to do, and that something is constantly changing as the year rolls round; but the series of chapters elsewhere makes it unnecessary to say more on this head. The love of gardening always *grows* upon one; and for those who can no longer take vigorous exercise, there is no more healthy occupation.

Botany is a famous hobby, and can hardly be studied in too practical a way. We may begin by reading illustrated books in the winter season, and even in the depth of winter it is always possible to obtain from garden or from greenhouse material which shall serve to illustrate all we want to know about any particular point. By the examination of simple flowers in various stages of development we can make considerable advancement in the study of systematic botany even in the winter evenings, but earliest spring and summer must find us in the fields.

Having mastered in a measure the A B C of botanical language, we dip a little deeper into the study, and learn something about the functions of the various parts and structures, which will require some sort of a microscope. About this time we begin to realise the fact that botany is a science of most absorbing interest, and not the mere fad outsiders consider it, or resting only on the capability of being able to give the names and classification of the plants we see growing around us. We learn that such simple flowers as lie on the table before us have an object in life—we had almost said, an interest in it --and that every part or portion of the plant has a duty to perform which tenders to that object, and which conduces to a perfect whole. We learn how the whole plant seems ever living for, looking from and to, that seed which to it represents the future. We learn of the "loves of the plants," and how all Nature seems to minister to their mysteries. We

learn by what conditions flower-structure in different plants is modified, and then even the once dry and repellent *language* of botany becomes living and attractive to us. We understand how the language of botany is built up, and how expressive it is; and anyone possessed of a dictionary giving the roots of words, can satisfy himself as to the meaning and expressiveness of its compound terms. And so the student goes on, digging deeper and deeper, with his microscope beside him, into the more minute details of histology; and, if he has become once really interested, never wearying. There is ample material in botany to make it a life-long hobby, and one which can be either pursued alone or in which many can take part.

It is indeed best, when studying botany out of doors or making a collection, to have a companion; and thus sister and brother, or father and child, may take delightful little excursions together and, like the bees, come home laden with treasure. These treasures are carried in a tin box, or placed between the leaves of a collecting portfolio made for the purpose, and must be laid out for pressing in the usual way before they are withered. Care should be taken to place them as naturally as possible, and not all right in the centre of the paper, else when together they will not pack well. Drying-paper is sold by most stationers in large towns cheaply enough, but thick brown paper would do. The specimens, arranged on the paper, are placed between boards, and a 56-lb. weight, or its equivalent, put on the top. Here they lie till dry, but for the first two or three days the paper will have to be frequently changed. Then they are arranged on stout paper, to which they may be affixed with weak glue, the stalks or thicker parts fastened with gummed paper. When dry, they are labelled with names and orders, and arranged carefully in the cabinet. Such specimens are always valuable for winter study, while their collection provides healthy and fascinating occupation for every summer holiday or country ramble. Portions of flowers, leaves, seed-vessels, &c., can also be preserved, and kept in the same way, to illustrate the various organs of different genera of plants.

The Aquarium.—This is a fascinating hobby, costing little and yielding much. To renovate a sea-water aquarium will always give zest and occupation for a seaside holiday; and sea-water can now be readily got in many towns, or salts procured, while a start can be made even from the backs of rough oyster-shells from the fishmonger's. On the whole, however, the fresh-water aquarium gives the most constant occupation. Fresh plants can be continually added for trial, different receptacles being kept for different forms of life. Special interest attaches to

microscopic life; and if even a cheap microscope be possessed, there will be intense interest in growing successfully such creatures as *Meliceria*, *Stephanoceros*, *Vorticella*, and other polyzoa. There are fields to conquer too; a method has yet to be discovered, and assuredly must be possible, of growing in confinement the beautiful *Volvox globator*, which has an unhappy tendency in such circumstances to assume what is called the "resting" stage (which is not attractive), and there to remain. *Meliceria ringens* is the well-known "building rotifer," and can be grown in confinement upon *Anacharis* with perfect ease. The larger beetles, and spiders, and larvæ must be kept apart, or they will eat their smaller brethren; and fishes and newts, again, demand separate treatment, the latter requiring a piece of rock-work on which they can crawl out of the water. A large aquarium or basin stocked with newts and a few small fish, and nicely garnished with cork and rock-work, is a lovely object.

Without going into details, which will be sought in books, we can give two hints, the result of experience, which may save much trouble. First, if any rock-work is made in cement or otherwise, of whatever material, *soak it in many waters* for many days, before any living things are put in with it. Secondly, while plenty of *any* vegetation will enable one to get along with care and attention, far the best plan is to procure for every vase or vessel a piece of proportionate size for the vessel of either rough coral, or pumice-stone, or the artificial rough "rock-work" arches made for such purposes. After well soaking these first as above—for they always contain lime in excess, and poisonous salts—leave them in pond-water in the vase, exposed to a north light, but not much sun-light, for weeks or months, till a lot of fine olive growth of some kind has come on them. This minute confervoid growth, which may be any of various kinds, is the best purifier and oxygenator of anything; and after it is well started, the water will always remain brilliantly clear, and well furnished with tiny bubbles of oxygen, which are especially important where fish or newts inhabit the aquarium.

An aquarium should be filled up when necessary with clear rain, or still better, *distilled* water, which can be got from a chemist at sixpence per gallon. It should be remembered that the *salts* in water do not evaporate; and hence this is the only way to prevent their quantity increasing. If a vaso is covered with a glass plate projecting an inch beyond it all round, and raised about the eighth of an inch by three bits of cork cemented on, there will be very little evaporation indeed; and what there is may be corrected by the addition of a few spoonfuls, once a month or so, of the above-recommended distilled water. A vaso nicely furnished is a beautiful object in

any window, but must not be left in the sun. A north window is best.

Pond-hunting for the aquarium is a fascinating occupation during any ramble, and very easy with a good collecting-stick. Altogether this hobby has much to recommend it.

Geology possesses many fascinations for the earnest and truth-seeking student. Simply as a recreative pastime it has very much to recommend it. To even the amateur geologist, who is acquainted but with the very rudiments of the science, every pebble he may pick up by the wayside, in a wood, in a sand-pit, or on the sea-beach, has a story to tell. The mountain-sides, cliffs, quarries, and even railway-cuttings, speak to him in a language not to be misunderstood, and take his thoughts back for millions of ages, to the past that has left its testimony on the rocks around him. It may be that our amateur shall thus become so enamoured of geology, that he or she may adopt the science as the pet study of a lifetime, and bring to bear on it an amount of analogical reasoning that shall lead to discoveries which may be recorded for ages to come; there is always new learning in this wide field. We prefer here, however, to look upon geology as a recreation, or hobby, from which, as in the study of botany, both health and pleasure may be obtained. How often do we not hear people who reside in the country, and who, perhaps, have been ordered exercise for the benefit of their constitutions, complain that they have nowhere to go to, no place to which they care to walk, ride, or cycle; and all the while, perhaps, the district teems with objects of geological interest. There is a world around and beneath them that they little dream of. To such as these the study of geology would, indeed, be a blessing, for the science is eminently calculated to the production of a calm and thinking mind in a strong and healthy body. Need we say more for it than that?

Perhaps geology is more suitable as a hobby for a man than for a woman; but that is just as the latter chooses to consider it. As in the study of botany, too, geology may be best studied with a companion. Two get over more ground in a day, examine or collect more specimens, interchange ideas, indulge in suggestive conversation, and, generally speaking, make the day spent across country more pleasant to each other. For these reasons two friends or relatives may well commence the study together, or a younger may accompany an older and more advanced student. This will be particularly beneficial for the former, and by no means disadvantageous for the latter, for a well-regulated mind will find as much pleasure in imparting knowledge as in being taught.

Illustrated practical books are essential to the study of the science in question. We cannot read too many books, nor can we read those books with a too well-balanced mind. The science of geology is so vast and comprehensive, that the student might easily be forgiven for approaching it with some degree of trepidation and doubts as to his mental capabilities of understanding it. But once the veil that hides its mysteries begins to be lifted, we find a charm about the study which there is about no other, with the exception perhaps of the fascinating glamour that seems to be thrown over the mind that for the first time is initiated into some of the secrets of the star-depths. It is ever telling us a story as we study, a story in which everyone must be interested—the wondrous tale of the world itself.

Before going into the country for what is called field-work, it is necessary that we should make ourselves thoroughly conversant with the outlines or rudiments of geology, which may be learned from books in the winter evenings, as in the case of botanical study. Though we cannot err in reading too many books, they ought to be of a thoroughly practical kind; and if we were to attend a class for a time, it would be an advantage; while another advantage would be making the acquaintance of some one well versed in the science; nor must constant examination of specimens in a local museum be forgotten. Many useful hints as to what to do and what to avoid can thus be obtained.

As to work in the field, we do not, of course, go abroad without taking a few tools with us. These are not difficult to choose; the first essential is a hammer, with which to break up any pebbles we wish to examine, or to chip pieces from the rocks. Hammers are usually of three sorts, and may be procured at any respectable ironmonger's—one is large and round in ends; another has a cutting or clearing edge; and a third, a small useful dressing hammer, for tidying specimens. But a double-faced hammer of no great dimensions is also sold, with which one can cleave or break or dress. A bag is required to carry specimens in, and a good pocket-lens or magnifying glass, an ordinary pocket-compass, a clinometer for ascertaining the dip and strike of strata, besides a good map of the district, and this should be one of those which are geologically coloured. A note-book is essential, and for more extended tours in mountainous districts an aneroid barometer. It is inconvenient to move about with too many tools, but in these days of easy travelling by means of the tricycle, a little additional weight makes but a trifling difference. When one comes to the district to be examined, and perhaps can no longer use the cycle, it is always easy to obtain the assistance of some village boy to accompany us on our ramble, and

carry all we need. One must not be too sanguine nor too eager at first; only he must keep his eyes open, and learn to despise no aid from any quarter—from a lapidary's shop, from a quarryman or stone-breaker, from some humble local collector, or from the museum of the district. We must take notes, and we should learn to make maps. A health-giving and scientific hobby of this sort, once adopted, can be, and generally is, kept up in after-years, however busy we are; and it will be of incalculable service to a man who has retired from the business duties of life, and who requires healthful exercise with an object in view.

Astronomy and the Telescope.—The telescope is undoubtedly one of the most important instruments of a scientific character that has ever been invented. Apart, however, from scientific research, one can have no better companion while on a tour, or while spending a few weeks at the seaside, than a really good telescope. One can often be obtained second-hand, being frequently advertised in society papers, and at considerably less than half its original cost; but the purchaser should see that the instrument has been made by a good firm, and have it on trial, to make sure that it is undamaged, and that the lenses are neither scratched nor dimmed. Of course, the *best* plan is to get a new instrument of a respectable house, and a very fair astronomical telescope with an object glass of three inches diameter can now be obtained for about six guineas.

The object glasses and eye-pieces of telescopes should be kept as free from dust and damp as possible, and cleaned when necessary with pieces of soft old silk, or soft chamois leather, kept in a box perfectly clean, for dust scratches the glass and renders it dim. An instrument that will not give satisfactory results is more of an annoyance than anything else; and with regard to determining whether what are called chromatic and spherical aberrations are corrected, the late Mr. Richard A. Proctor makes the following remarks:—

“To determine whether the chromatic aberration is corrected, the glass should be directed to the moon, and accurately focussed for distinct vision. If then, on moving the eye-piece towards the object-glass, a ring of purple appears round the margin of the object, and on moving it in the contrary direction a ring of green, the chromatic aberration is corrected, because these are the colours of the second spectrum. To determine whether the spherical aberration is corrected, the telescope should be directed towards a star of the third magnitude, and focussed as before. A cap with an aperture of about one-half its diameter should then be placed over the object-glass. If no new adjustment be then required for

distinct vision, the spherical aberration is corrected, since the mean focal length and the focal length of the central rays are equal. On the contrary, if, when this cap is on, the eye-piece has to be pulled out for distinct vision, the spherical aberration has not been fully corrected; while if the eye-piece has to be pushed in, the aberration has been over-corrected. A star of the first magnitude being brought into the field of vision, if an irradiation from one side is noticed, part of the object-glass has not the same refractive power as the rest, and the part which is defective may be found out by applying in different positions a cap which hides half the object-glass. If the irradiation is double, it will probably be found that the object-glass has been too tightly screwed, and that the defect will disappear when the glass is freed from such undue pressure.”

The amateur will begin his observations by turning his glass towards the moon. This he will naturally do when she is full; but nevertheless the character of her mountain scenery, &c., is better seen when she is waning or increasing, because then we have the contrasts of light and shade.

But he also has before him the peculiarities of the planets, small planets and comets which cannot be seen by the naked eye, myriads of stars where there seemed none, many interesting and beautiful double and coloured stars, and other wonders of the heavens, according to the power of the instrument he possesses. If he can indulge in a star-spectroscope, another wondrous field of research lies before him. And finally, perhaps he may become a member of some Society, and take part in some of their routine observation—work which, though of a comparatively obscure character, is more or less necessary or useful to his fellows, and even to the world.

The Microscope.—The microscopist finds a harvest of beautiful objects everywhere he can turn his eyes or his thoughts, indoors or outdoors. We need scarcely remind such of the very great benefit this marvellous instrument has been to mankind in the study of animal and plant life, and still more in the diagnosis of diseases that, without such aid, would have baffled our utmost skill. To the botanist also the microscope is a great boon, as well as to the geologist. “By means of the microscope,” says a recent writer, “man increases the power of his vision, so that he thus gains a greater knowledge of the nature of all objects by which he is surrounded. What eyes would be to the man who is born blind, the microscope is to the man who sees only with his naked eye. It opens a new world to him, and thousands of objects, whose form and shape, and even existence, he could only imagine, can now be observed with accuracy.”

There are different styles of microscope, only one or two of which need be referred to here. What is called the simple microscope is in its simplest form a common hand-glass of good magnifying power. Even with this instrument, which can be bought for a few shillings, the multitude of marvels one may see is surprising. Nevertheless, when examining anything, one ought to have both hands free, and the object steady; so that it is best to have it mounted in a simple way on a weighted stand, with a stage on which the little object-glass may be placed, with a sliding tube above, to which the lens may be fixed, and so adjusted over a small hole in the stage which supports the glass on which is the object to be examined. With an instrument even so simple as this great results have been achieved, and it has the merits of handiness and cheapness as well.

The compound microscope is a much more complicated affair. The most beautiful results are obtainable by the binocular microscope, which to some extent gives us relation of parts, or perspective, in many objects, instead of a flat surface. "The chief application of the binocular microscope," says a writer, "is to such objects as require low powers, and can be seen by reflected light, when the wonderful relief and solidity of the bodies under observation astonish and delight even the adept. Foraminifera, always beautiful, have their beauties increased tenfold; vegetable structures, pollen, and a thousand other things are seen in their true lights, and even diatoms we may predict will receive elucidation as to the vexed question of the convexity or concavity of their infinitely minute markings. The importance of the binocular principle is specially apparent when applied to anatomical investigations. Prepared microscopic injections exhibit under the ordinary microscope a mass of interlacing vessels, whose relation, being all on the same plane, it is not easy to make out with any degree of satisfaction. But placed under the binocular they at once assume their relative position."

In buying a microscope, be it of what style it may, the purchaser should deal with a really good house. Good microscopes may be had at a variety of prices. It would be as well, at all events, to inspect some good new ones; but second-hand instruments of excellent workmanship can sometimes be bought cheaply, even at the shops of opticians; or, failing this, they may be found advertised in the columns of some of the leading medical papers, such as the *Lancet*, or *British Medical Journal*.

The most useful pattern where cost is an object, and giving the most for the money if purchased new, is what is generally known as the English "histological pattern." Being made chiefly for medical students, this will do really good work, and will cost

about £4 with one eye-piece; and two objectives of say, 1 inch to $\frac{3}{8}$ inch, and $\frac{1}{8}$ inch for high magnifications, will cost respectively about 20s. and 30s. more. These lenses are good enough for anybody; and, indeed, the newer German formulae introduced in 1889 and 1890 at these prices are better glasses than could have been obtained at three times the price only ten years previously. At a pound or two more, larger stands can be obtained, to which apparatus can be added in future years; and the extra cost of binocular tubes to such will be £2 to £3. For extremely high magnifications splendid "oil-immersion" lenses of $\frac{1}{12}$ inch focus can now be obtained for £5 each, superior in all respects to lenses costing £15 and £20 ten years back; but such are only needed for studying bacteria and the finest details of histology. The modern microscopist has therefore great advantages, and can start with better appliances at from £6 to £10 (to which he can add as he goes on) than his father could have done for £50. No money could be better spent by anyone at all likely to follow up microscopy in reality, and it may probably lead to the pleasant and useful recreation of a lifetime.

There are various subsidiary pieces of apparatus which are useful from time to time, especially for modifying the light. The student will have to learn the use of these by degrees, and had better procure them as he finds their need. A "spot-lens," however, for making transparent objects appear to shine upon a dark ground, and which only costs about five shillings, he should procure as soon as possible. There is also polarising apparatus, which distinguishes otherwise invisible structure, and opens up a whole world of gorgeous colour. But the main thing is to learn to *work* with the microscope. A text-book will be needed to teach methods of manipulation and mounting of slides—for there are many methods, and all objects cannot be treated alike. No permanent interest will ever be kept up while the possessor confines himself to looking at ready-mounted slides. These he should learn to prepare himself, and to do it well. Now and then this pursuit, if special excellence be developed, may lead to even remunerative work, as we have known in at least one case. But much of the most fascinating observation of the microscopist is done upon *living* objects. Some of these are confined in a live-box; while aquatic forms of life are placed in troughs of various sizes and shapes, or in a little hollow ground out of a piece of glass, in which the tiny object is placed with a drop of water, and covered by another thin glass, or even laid on the flat glass alone with water and covered, the whole being held by capillary attraction. When the student has once learnt to do his own pond-hunting, and examined the glorious

beauties of self-caught *volvox*, or *vorticella*, or *flos-culuria*, he will have begun to grasp the world of minute loveliness that lies all around him, and will have become a microscopist for life. What with hunting and collecting, dissecting, section-cutting, and mounting, he will never lack occupation if he lives a hundred years. He can exercise his ingenuity too. We well remember at a *soirée* some years back, when a Fellow of the Royal Microscopical Society first showed the entire head of a fly sucking sugar. It was simply done by rolling up a tiny paper-cone, gummed together, and cutting off the tip, so that the head of the fly could be just pushed through. The prisoner was kept from drawing back by a morsel of cotton-wool put in beneath him, and the cone and fly were then gummed down upon a slide. It is a common thing now; but it was new then to nearly all present, and made quite a sensation.

Insects caught for dissection are first put in what is called a death-bottle. This may be bought or made. It should have a wide neck, and be of handy size. A few pieces of cyanide of potassium are put in the bottom. (N.B.—This is a very powerful poison.) Cover with a thin layer of silver sand, and then with a thin plaster, made by mixing silver sand and plaster-of-paris with a little water. Over the latter, when hard, a morsel of blotting-paper is laid, and the bottle is ready to receive the inmates, which soon die, and may then be dissected, according to the directions given in the books.

We cannot enter here into any details of microscopic work; but will give one very important hint respecting the use of the eyes. Never work with more light than is necessary for comfort, towards which it is very useful to have discs of finely-ground glass, both white and purple, which can be adapted under the stage to temper the light. And in using any single-tube instrument, avoid from the first any habit of screwing up one eye (generally the left), and throwing the work upon the other. Both eyes should be kept open, and used in turn over the instrument. Just at first the part of the table, &c., seen by the eye not in use will interfere with the view of the object, but this is only at first; persevere resolutely, and in even a minute or two, fixing the mind on the object, it will be felt how the other eye ceases to "see;" this power rapidly develops, until in a day or two only the object is seen at all. For this very little trouble at first an invaluable power will have been gained, and all risk to the eyes avoided. Nearly all experienced microscopists work in this way when not using a binocular. If this should meet the eye of anyone who, from long bad habit, finds this now difficult to overcome, a bit of wire should be bent into two circles connected by a

straight piece, something like the rims of a pair of spectacles, but both round and the connection straight. One circle is of a size to "spring" round the eye-piece and hold tightly; the other is covered with black paper. Whichever eye is in use, this black disc can be brought round in front of the other to shut out the view, and will enable each eye to be used in turn without difficulty. To screw up one eye is to strain both very injuriously.

Not the least merit of the microscope is that it aids almost any other scientific pursuit. To botanist, biologist, and mineralogist it is indispensable; and many of the most beautiful phenomena of optics are within its range. And finally, a microscopist of some knowledge and experience has it in his power from time to time to give a great deal of pleasure to others, and that of the best and highest kind.

Physical Science of any kind may also claim its votaries, and the present writer has found recreation for many years in the experimental study of physical optics, and the "projection" upon a screen of all sorts of physical experiments. Chemistry, too, has a wealth of interest that never ends. Such hobbies as these, however, are perhaps less adapted for general cultivation, and depend rather upon strong individual inclination.

High-class lathe-work has a strong fascination for some, but high-class lathes are expensive; still, even £100 may often be well spent in providing recreation of this sort for a lifetime.

But we would strongly urge upon every one likely to be worked and worried in this busy world to provide for himself some pursuit in which keen and unflagging interest can be taken, against the days when it may no longer be only a pleasure, but an actual necessity for health of mind and body. Art itself may be thus followed; and that is where women commonly have opportunities and advantages over men, being at least fairly started in youth, if they show any inclination towards that musical or other capability which may stand them in good stead later on. But all can have something; and it does one's heart good to see in some of our great cities poor working men absorbed in the real study of natural history in some branch or other, and gradually accumulating such stores of knowledge—real nature knowledge—that we have actually known a man of British reputation, and F.R.S. of course, glad to be able to sit down and have a discussion with a shoemaker whilst pursuing his daily work, both feeling that they were on common ground. There will always be more or less of this pleasant intercourse and interchange, sooner or later, for anyone who rides a hobby faithfully and conscientiously, as it ought to be ridden.

THE ART OF DRESSING WELL.

THOUGH the knowledge of the art of dressing well is supposed to belong more especially to women, how rarely is it that we see a perfectly satisfactory toilet!—one that pleases not only by its colour, but of which the general style assorts with the complexion, and is exactly suited to the figure of the wearer. It is, perhaps, needless to say that few women have the power of choosing their dress by inspiration, or can be faultlessly attired, unless they are prepared to give a certain amount of thought to the matter. Taste in dress does not consist in choosing a model from the pages of a fashion book, or in blindly following the advice of the dressmaker or milliner. A well-planned costume should have some originality about it, which gives an individuality to the wearer, making her in an inexplicable way to differ from other and perhaps more fashionably-dressed women. The dress should also be so contrived as to conceal any defects there may be, and to exhibit to the greatest advantage all the best points of her figure. At the same time, this originality, if carried too far, is apt to develop into eccentricity, which, by attracting universal attention, is by no means to be desired. Where many women err in the matter of dress, is in the disregard they have for the “beauty of appropriateness.” Nine people out of ten choose a hat or bonnet, not because it is *becoming* to their particular cast of features or shade of complexion, but because their milliner tells them it is “the newest thing out.” Or they select a dress exactly like one worn by an acquaintance at the last entertainment at which they were present; quite ignoring the fact that though it may suit their friend’s fair hair and pink cheeks, it will be anything but becoming to their own raven locks and sallow complexion.

Colours.—It is this stumbling-block of colour that is fatal to the effect of many a costume, in itself stylish and in good taste. Most women about to choose a new dress apply to their dressmaker, who tells them that the “colours of the season” are perhaps heliotrope, grey, vieux-rose, and shades of green. One might venture to predict that a sallow-faced woman will select the heliotrope, or a dull and yellowish-green; and the woman who has a complexion of deadly pallor and grey hair will select a light grey, suitable only for a blooming girl of eighteen. Now a gown which reflects the tint of the complexion is rarely a success; but, as a general rule, the colour of the hair may be repeated in the dress quite successfully. This is notably the case with red or auburn hair. There is a popular fallacy that bright blue is appropriate to this tint, but no

greater mistake could be made. Only the faintest shades of blue can be admired; but at the same time it must be remembered that, though so called, red hair is never absolutely red, the predominant shades being reddish-yellow or rich orange. Hence red-headed people look well in shades of yellow, but almost every tone of red should be avoided. White or cream has a charming effect against the ruddiest of auburn, and the palest mauve is not amiss. Red-haired people may console themselves with the knowledge that there are few materials they look so well in as black velvet. Here they have the advantage over brunettes, who have an almost funereal appearance in this magnificent, but somewhat gloomy, material.

Another common idea is that fair-haired people should eschew red. Here all depends upon the complexion. Provided that the blonde has a fresh colour and crisp hair, with shades of brown beneath the gold, she may wear red as effectively as her darker sister, but it should be a warm crimson, with no touch of vermilion about it. Those women whose hair and complexion can be described neither as fair nor as brune have great advantages in being often able to wear colours that are appropriate to either brunettes or blondes.

Due attention must, however, be paid to the tone of the complexion and the colour of the eyes. Those dark people who are possessed of rich full-coloured complexions can stand bright reds and gorgeous yellows, but in the form rather of brilliant touches gleaming out here and there about the dress than in so wide an expanse as a skirt, or even a bodice. Those brunettes whose complexions have seen better days, or who have fair skins, must be content with the paler and softer tints. Brown and its many shades are considered becoming to every one, but, for all that, they require the exercise of much care. Few gowns can be more unbecoming to a fair, insipid-looking woman with “brown sugar” coloured hair, than one which repeats its dull tint unrelieved by any touch of a brighter hue. A brown-haired woman who wishes to choose a brown gown, should avoid such tones as match her hair, but should take those that are two or three shades lighter or darker.

Style.—Even if due attention be paid to colour—and there are generally sufficient new shades introduced each season to suit all hair and every complexion—few people have enough moral courage to avoid a style of dressmaking because, though fashionable, it does not suit their figure. The tall, slight woman *must* have stripes, when stripes are worn, for

her gown, which is made in straight, flat folds, though the formal vertical lines have the effect of adding considerably more than one cubit to her stature, making her look more lank and gaunt than ever. She should leave such materials and such a style for her shorter and stouter friend, whose figure may be wonderfully improved by a judicious arrangement of these straight lines, and especially by the manner in which the stripes are managed about the waist and bust. Again, the glossy and shimmering materials, by reflecting the light with every movement of the wearer, give a sort of indistinctness to the outlines of the figure.

Plaids and checks are unbecoming to the most perfect form, owing to the rigid appearance produced by their repetition all over the body in a series of hard squares. They are more satisfactory for a skirt, being broken up by the folds and the fulness; and the bodice in this case may be of velvet, repeating the most prominent colour of the plaid. In the same way, short-waisted women should choose for the decoration of their bodices such styles as braces, straps, or vests arranged in flat pleats from neck to basque, which tend to add to their length. Such a figure should never be tempted to wear a waistband, but should leave these to those women whose object it is to reduce their apparent height. A style of bodice with long, straight trimming has the effect of decreasing the size of the waist, which, in a broad figure, is generally too thick for beauty. The fashion for large full sleeves has much the same effect, but unfortunately they are not becoming to short, thick-set figures unless arranged in long flat folds, which are drawn into a point just above the elbow. The larger the sleeves are at the wrist, the smaller will the hands appear.

The fancy in dress for the time being is opposed to the use of a double skirt with draperies or any superfluous folds, greatly to the advantage of those short women who require to add to their height—at any rate, in appearance. At the same time, the plainness and scantiness of the skirt renders a fashionable gown trying to those with prominent hips, over which a little amount of fulness is always advisable, to break the otherwise hard outline.

Jackets and mantles that fit tightly over back and bust are unbecoming alike to the very slight or to the very stout; yet how commonly do we see figures of both these types encased in jackets which seem as if they must burst in the one case, and in the other as if they enclose nothing more than a few loosely-jointed bones! Nowadays it is so easy for the one class of figure to add a soft silk vest which conceals the outlines and lengthens the waist by falling in longitudinal folds and for the other class to add a

short cape to her jacket, which by a full flounce at the edge gives additional fulness to the bust and wideness to the shoulders. In these times, when fashion changes rapidly, it is an impossibility to give hints as to the details of the styles appropriate to different figures. The judicious arrangement of gathers or folds in a bodice will do much to conceal an indifferent form—a perfectly tight corsage, like that of a riding-habit, being appropriate only to one that is faultless in all its lines and curves. In the construction of a dress the greatest attention should be paid to all those details which, though insignificant in themselves, have much to do with the production of a satisfactory whole. To give an instance:—The style of one dress over another, the skirt more especially of the under-dress being visible, is always more or less in fashion in various modifications, but it is rarely that it is carried out judiciously. Thus, no scrap of the material of the under-dress should be used on the over-dress, unless it is plainly seen that it is intended to form part of the under-dress; and all facings and linings should be of a different fabric. If the under-dress is of brocade, this should be visible in front from the hem to the throat. The cuffs and collar should not be of brocade, as is usually arranged, but of the plain velvet of which perhaps the over-dress is made. Should any of the material of the under-dress be required on the sleeves, it should appear either at the wrist, peeping out like an under-sleeve, or drawn in loose puffs through three or four slashes on the shoulder. The same applies to the collar. If the front of the over-dress and the points of the collar and cuffs are required to turn back, to show the under material to better advantage, they should be faced with plain soft silk, to carry out the idea that the velvet dress is lined throughout with this. Unless a high-class workwoman is employed, ladies have to think these details out for themselves, or a harmonious whole will rarely be obtained.

It is difficult to say which effect is the better—that given by a dark over-skirt and a light petticoat, or *vice versa*. A well-known authority on the subject of dress thus expresses his opinion on this matter:—“A little woman should not put the darker shade below, because at a distance a person's height appears to end with the lighter one, and is consequently shortened; and, by the same rule, a tall woman diminishes her stature by wearing a petticoat which, by its deep shade, escapes notice, leaving only the upper skirt visible.”

In few cases can women show their sense of the fitness of things more fully where dress is concerned than in the styles they select for use on special occasions. The flannel tennis-dress, for instance, in Fig. 1 is as nearly perfection as can be obtained for

its purpose; but it would not be suitable for wear to church on Sunday, or to a *matinée*, concert, or about London on a shopping expedition. The loose

Hair-Dressing.—It may be taken as a general rule, that if curly or wavy hair suits any particular style of face, Nature will not have made the lock:



Fig. 1.—TENNIS-DRESS.

jacket is easily slipped on and off between the sets; and the slight drapery in front of the skirt, while taking off from the excessive plainness, in no way impedes the movements of the wearer.

straight and lank. On this principle, the plain homely face with its smooth soft hair will look far better with its tresses arranged in coils, plaits, or twists, than if the owner were to make any attempt to wave or frizz them. In choosing a style for the

hair, a woman must take note whether her face is long or short, narrow or round. A long face requires no addition of puffs and curls above the forehead; a round face looks better with the hair combed off the ears, and arranged softly towards the top of the head. Few faces can bear a perfectly flat arrangement of the hair; more especially is this the case when the head is inclined to be long. A receding forehead may have its awkward appearance much improved by bringing the hair over it lightly, so as effectually to hide where the forehead ends and the hair begins. A dignified and stately cast of features never looks better than when the hair is coiled low in the nape of the neck, lightly waved back from the forehead, and the straight shape of the coils broken up by a few fluffy curls. It is the round faces, with merry, laughing eyes, which lend themselves best to an arrangement of careless loose curls; and their charms are often enhanced by the very luxuriance of the wavy masses of hair upon the top of the head.

Hats and Bonnets.—

In choosing hats and bonnets, the shape of the head and style of the hair should be the guides to be followed; but unfortunately a woman, even though she be correct in her theories as regards

what suits her and what does not, is often forced, against her will, to bend to the dictates of fashion, simply because there is nothing to be had but fashionable hats and bonnets, and she can find no milliner to carry out her ideas. Colour in millinery must depend upon the costume with which it is to be worn, and this we will hope has been selected with due consideration for the complexion, height, and general style of the wearer. Lately it has been an empty compliment to bestow the title of hat or bonnet upon the bows of ribbon or wreaths of flowers that have done duty for these articles of dress. The beauty of appropriateness can rarely be better exercised than in the wearing of a bonnet, whether as regards the material or the colour used for it. What can be more revolting, for instance, than the appearance presented by an aged woman, with one foot in the grave, bearing on her shaking head the mockery of a wreath of pink-tipped daisies or

blush-rose buds? The wearer probably chooses such blossoms because she liked them in her youth, and forgets that the attractions that made them charming then have long since departed. Even in this sensible end of the nineteenth century there are many of such Mrs. Skewtons still in existence, as any one may prove who is detained for half an hour in the shop of a fashionable milliner.

Much that has been said concerning the theory of hair-dressing applies equally well to hats and bonnets. Edifices piled with feathers and flowers, even if in fashion, should be avoided by those with long thin faces; so should hats with wide brims, which overshadow the features and, as it were, "bonnet" a delicate and fragile-looking physiognomy. Those faces well flushed with colour, with broad cheeks and round bright eyes, often look saucy and bewitching enough beneath their pent-house of lace and straw. The medium course is always the best, and though a hat trimmed high with ribbons adds to the stature of the wearer, it is more often ridiculous, by spoiling the correct proportions of the figure.

Every woman should be careful only to wear a dressy hat or bonnet on appropriate occasions. The "sweetest" achievement of the milliner will look absurd above an ulster and on a cross-Channel



Fig. 2.—LADY'S TRAVELLING-HAT.

steamer, and the most sensible of felt hats will spoil the most tasteful of fête-day costumes. It is often in our climate quite necessary that a waterproof cloak should be worn beneath a smart bonnet, but the cloak in such a case should be of such a nature as to show plainly that it is only used to protect the wearer from a passing shower, and that it is to be removed at the first opportunity. For this reason, a thin silk-covered macintosh is preferable to anything more weighty. A felt hat, or, if the age of the wearer precludes this, a straw bonnet trimmed simply with ribbon, forms the most suitable head-gear for use when travelling. Shall we ever forget the dismal aspect of a lady who had ventured to make the ascent of Snowdon on a pouring wet day, with a hat on her head plentifully decorated with scarlet poppies? The dye of the flowers, slowly trickling down her face, caused her to present so tragic an aspect that, had she fallen down a precipice

and been nearly killed, her appearance could scarcely have been more alarming. A sensible felt hat, such as those of which one or two leading Oxford Street shops make a *spécialité*, and simply trimmed with weather-proof ribbon, worn by another tourist on the same day, was exposed to wind and rain unprotected for several hours, and survived long enough to serve for many another year. It is very essential that a travelling hat should be closely fitting, as in Fig. 2, and have no trimming of any sort to be damaged by any amount of rough usage.

Gloves.—A person of an unrefined and coarse disposition is never known habitually to wear well-cut, well-fitting gloves. There is much truth in the French phrase, *Bien coiffée, bien gantée, bien chaussée*; but many additions might be made. The idea of good gloves entertained by many a woman, is that they should be as small a size as she can possibly squeeze her hands into. Cramp, the difficulty of handling purse or parcels, are of no consequence; and should one of the gloves burst under the undue strain, she will never acknowledge that the fault rests with herself, but will blame the unfortunate glove manufacturer; who, however, makes much of his profits out of such foolish people. There is a *vulgarity* about tight gloves that spoils the best costume. They should be of such a size as to fit the hand exactly, without undue looseness or strain upon any part of the kid. Gloves are always an expensive item of dress, and if economy be an object, it is well to keep to one particular make, and to buy them only in two or three colours. If the hand is, as is often the case, of a between-size, the gloves should always be bought at those shops, of which there are several in London, where half-sizes can be procured. If the wearer is so unfortunate as to have some defect in her hands which renders it impossible for them to be fitted by ready-made gloves, there is nothing for it but to have them specially made. In this case it is well to order several pairs at a time, and a fresh order should be given before the gloves of the last are all used up, for they take time to make, and it would be very inconvenient to have none available for any special occasion that may turn up unexpectedly.

When once a cut has been found to suit any particular shape of hand, it should be strictly adhered to; some makes are appropriate to stout and broad, others to long tapering fingers. The fashion for wearing gloves to match every dress has somewhat declined, and tan in its many shades has, except in the case of silk gloves, been considered appropriate to gowns of most colours. A large and broad hand should be encased in dark gloves rather than in light, except, of course, when the dress is very light.

Long gloves tend to give the hands a slender appearance; short ones, which are likely to become popular once more, having the opposite effect. The *Suède* gloves are always unbecoming to thick wrists, for the reason that, by being arranged loosely below the sleeve, they increase the thickness of the arm.

Many people like to wear silk gloves in hot weather; and though not so dressy-looking as kid, they are to be had in a greater variety of shades to match any tint of material. They have one great drawback; they soon become cut by the finger-nails into holes; and the gloves sold with a little kid thimble on every finger are scarcely likely to find much favour, owing to their clumsy appearance. The inventor of double tips invisibly spliced has yet to be found, and no doubt a fortune awaits him. Very coarse, thick gloves should be reserved for use when gardening, and should never be used otherwise, except perhaps by the seaside or in the depths of the country. The same remark applies to gloves with gauntlets. The plea that they protect the wrists from sunburn is scarcely admissible nowadays, when long gloves are so easily obtained, and they form an effectual disguise for a pretty hand by adding thickness and shortness to the wrist.

Boots and Shoes.—That a foot squeezed into a boot several sizes too small for it, and in which the toes must rest one on the top of another, is an object to be admired, few people, be they men or women, could truthfully admit. Yet the attempts made up to the present time to bring in the fashion for wearing boots with room in them for the toes, have met with little success, probably because the feet have been distorted for so long, that they require practice and patience to become accustomed to their more spacious clothing. The high heels are said to be doomed, and certainly they are less exaggerated than they were some time ago; but as long as there are women (and men too) in the world, whose only idea of a well-made shoe is that it shall be acutely triangular at the toe, and have a peg in the middle of the foot, bootmakers will be found ready to humour and pander to the false tastes of their customers. Provided that the boot or shoe is long enough, the tip may be as pointed as it is possible to make it; the folly lies in trying to squeeze the toes into such a space. It is possible to get sensible boots and shoes, as well made and as neatly fitting as those which raise a shudder in the minds of all who have even cursorily studied anatomy; and no two opinions could exist as to the comparative grace of a woman walking in boots made to fit her feet, and one whose feet have been made to fit her boots.

The old-fashioned idea that large hands and feet

betoken a coarse and rough temperament is rapidly dying out, now that our girls are taking active exercise in rowing and tennis, and are following such pursuits as *brassre poussée*, light carpentry, wood-carving, modelling—all of which tend to spread and develop the muscles of the hands; while tennis, cricket, and tricycling are having the same effect on those of the feet.

Much may be done to improve the appearance of a foot by the material chosen for the boots and shoes, and the trimming, if any, that is used on them. A large foot will look smaller in a brightly-polished boot than in a dull one, as the way the gloss reflects the light breaks up and renders the outline indistinct. A low instep, too, may be apparently raised by a large bow or rosette on the shoe. Evening shoes never look smarter than when they match the prevailing tint of the dress with which they are worn; and if the feet are large, the shoes should match that portion of the gown which rests against them; so that at first sight it is not apparent where the dress leaves off and the shoe begins. Very conspicuous shoes will only draw attention to an ugly foot, therefore they must be as neat and trim as possible. A large foot looks better in a toe-cap that comes well up the foot, and thus appears to diminish the length by breaking it up. No eccentricity of any kind should ever be indulged in, whether the foot is well shaped or not; and all feet look neater in boots that button than in those that lace up the front.

People who have worn tight shoes till they can bear the misery no longer, not unfrequently rush off to the opposite extreme, and buy them just as much too large. Then they wonder that their corns, instead of disappearing, increase and appear in fresh places. The reason for this is, probably, that at each step taken, the boot, instead of being steady, rubs against some portion of the foot, and a fresh corn is caused by the friction. Those who suffer from tender feet should abjure patent leather as a material for their boots and shoes; and those whose aim it is to make their feet appear as small as possible should never adopt it, in spite of its gloss, as they will find that a patent leather boot, owing to its want of elasticity, will have to be half a size larger than any other kind of kid. Horse-skin takes a splendid polish if required, and at the same time is one of the easiest and softest of all materials. It is a good plan always to keep one pair of boots and shoes in reserve, and to order a new pair directly these are taken into wear. Boots always wear better if they are kept for some time after they are made, to enable the leather to become perfectly seasoned.

It is well to wear a new pair of boots or shoes a few times at first, until they have become moulded to

the shape of the feet, and then to put them aside till required. Any boots and shoes that are likely to be kept for some months should be smeared with vaseline, or with one of the patent preparations sold for the purpose, and put upon boot-trees, that they may keep their shape. Winter or mountaineering boots more especially, need this treatment. Boots or shoes that have become wet should be strictly kept away from the fire, if it is ever hoped that they will be comfortable once more. They should be turned up to dry in a room where there is a fire, or they may be left in a warm kitchen after the fire has been allowed to die down in the evening. No boot or shoe should ever be worn after it shows signs of becoming trodden down at heel. Some people are naturally more apt than others to wear their boots in this way, and the slovenly appearance of the feet under these circumstances spoils the most elegant of toilets. Much of this wearing down may be remedied by having additional stiffening put into the boots at the particular place where it is most needed.

Stockings.—Much of the comfort or discomfort of boots and shoes depends upon the stockings worn beneath them. These should be of wool; thick or thin, according to the season; and should fit perfectly. If of good quality, there should be no fear of any discomfort arising from knots in the wool or from badly-finished seams. Cotton stockings suit very few feet, and silk or spun silk should be worn only for full dress, or as a rest to the feet in the evening after a long walk or other severe exercise. The remarks already made concerning the ornamentation of boots and shoes, apply with equal force to stockings. The larger the foot, the plainer should the stocking be. Strips of embroidery running down the leg are much more becoming than those which are worked round the stocking, or than such ornament as takes the form of coloured stars or dots sprinkled over the instep. Black stockings are in far better taste than coloured, or even white; but they should be drawn up smoothly and tightly, not allowed to set in wrinkles round the ankles or the edges of the boots. Now that so much is said upon the subject of sanitary clothing, it is unnecessary to remind those who are particular in their dress, that suspenders have now quite superseded garters for this purpose.

Under-clothing.—It is rarely that English women can be brought to understand that the good effect of their dress is greatly dependent upon the quality of what is worn beneath it. Too many of them spend largely upon dresses, mantles, and bonnets, and put up with the cheapest ready-made under-linen they can procure. To get really substantial articles, at least a fair price must be paid; and

a first-rate cut cannot reasonably be expected in those garments that are made by the gross by machinery. At the same time, it is by no means essential that the under-clothing should be lavishly trimmed with lace or coloured ribbon, and made elaborately with tucks and embroideries. Good long-cloth garments are readily procured simply finished with a little open-work embroidery and coral-stitching; but it is very necessary they should be so sloped that they do not increase the apparent size or hamper the movements of the wearer. For this reason, among many others, the woven elastic woollen under-clothes are the most comfortable; and though the brown colour of many prevents them from being so smart in appearance as the white ones, with careful washing or cleaning they last for years—in fact, as long as the others. The summer garments should still be wool, though finer and thinner in quality than those worn in winter.

The weight of the clothes should be so arranged as to fall from the shoulders rather than from the hips, but much of the comfort in their wear depends upon the much-abused corsets. Those who advocate the use of hygienic clothing are apt to carry their opinions too far in their denunciations of all and every corset. Their blame should rather be reserved for those foolish women who buy stays so cut and shaped that the vital organs must necessarily become squeezed out of their natural place. If a small waist is particularly desired, the under-skirts may be made to button on to the lower edge of the corsets instead of to fasten round the waist. If shoulder-straps are then added to the stays, little or no inconvenience will be felt from the weight of the petticoats. Corsets that are well finished, and made, not of rich satin and lace, but of more serviceable sateen jean (black, white, or coloured) should be good enough for the most fastidious, provided they fit the figure easily, and no discomfort is experienced when the body is thrown into various positions. They should not be very stiffly boned, only sufficiently so to enable them to keep their shape. No dress can set thoroughly well—and, indeed, a good dressmaker will raise an objection—unless the corsets are of a good form and quality. It stands to reason that stays require superior work and care in the shaping; the inferior makes will become untidily loose in less than a month's wear, while they will rarely be found to fit the figure with uniform comfort. They will probably be too tight in some places, too loose in others; or there will be undue pressure on an inch or two somewhere on the body, which no amount of letting out seams or letting in gussets will remedy. Knitted woollen corsets have no rivals for comfort or durability with certain classes of figures; but, though they may now

be had with firmer bones than when they were first introduced, they do not afford sufficient support when there is a tendency to *embonpoint* on the part of the wearer.

The elastic slip-bodices for wearing over the corsets add greatly to the ease with which a dress may be made to fit the figure well. They are designed to fit every form, and set comfortably, without any ridges or wrinkles to show through any thin and tightly-fitting corsage that may be worn over them.

As was pointed out in former articles, it is a great mistake to wear many under-skirts, especially when the clothing is all of wool. Except in certain cases, two should be an ample allowance. The tendency to clothe the body unequally, so that it cannot be kept at an even temperature, should be strictly guarded against. White tucked and embroidered under-skirts are rarely seen now, except under dresses worn on smart occasions; and indeed few garments have a more tawdry appearance than these white petticoats worn in a muddy street on a wet day. They are only admissible under thin, light dresses, in bright summer weather; and as a clean one is essential almost every day, they can scarcely be considered as encouraging to economy.

Cuffs and Collars.—Many women are of the opinion that they never look to better advantage than when they are wearing plain white linen collars and cuffs. Hence these small accessories of dress are always more or less in fashion, only varying from time to time in slight details of cut and the position of the holes for the studs. The recent fashion for high dress-collars, and sleeves which do not reach nearly to the wrist, has been much against the use of linen collars and cuffs; but as there seems a likelihood of the neck-bands becoming lower, and the sleeves longer, admirers of this simple finish to a plain costume will be able to gratify their taste once more. Linen collars and cuffs are expensive wear when economy in washing has to be studied. In the neighbourhood of London or of any large town they are but one day's wear, and two at most in the country. They are suitable only for tailor-made or equally simple dresses, such as are used in the morning, and look out of place when worn, as they too often are, with a silk or velvet costume. A collar or pair of cuffs that have become frayed at the edge should be discarded at once, for not only do they give a poverty appearance, but the rough and starched threads are likely to rub tender skins till they are not only sore, but actually bleeding.

The fashion of tacking a simple line of ribbon inside the neck of a dress still holds amongst well-dressed women, but has nearly as hard an effect as the linen. For this reason it should be worn with

simple dresses only. The ribbon is invaluable when travelling, as it is so inexpensive that it may be thrown away when soiled, and a store of several yards will pack easily into a far smaller compass than a single pair of cuffs. For afternoon and more elaborate dresses there is an enormous choice of pretty fancy frillings to be had, rising in price from twopence-halfpenny a yard up to half-a-crown. The woman (or girl rather, for the style is suited only to young faces) who possesses a full white throat, will like to expose it by wearing a fall of soft lace or lisse turned down over the neck of her dress, which, in this case, has no collar at all. This style is specially becoming to those with round features and bright complexions. Those women who have passed their *première jeunesse*, and whose cheeks have faded with the wear and tear of years, look better with ruffles of soft lace brought closely round the throat; and if this is cream instead of white, it will be all the more becoming. Fine black lace looks well with grey hair, especially if the complexion is pallid. Nowadays, a long neck and sloping shoulders, once so much admired, are rarely considered elements of beauty, even with a low-necked dress; a band of velvet, or three or four rows of pearls, being worn to give the effect of somewhat reducing its length.

Jewellery.—Use, and not abuse, is the main point to be attended to in the wearing of jewels and trinkets. Some stones are for more full dress than others, so it is hardly appropriate to wear them on a morning dress at breakfast-time. Few women, it is to be hoped, who possess fine diamonds, would think of thus displaying them, but they are too often inclined to the belief that the imitation stones, being merely imitations, may be thus worn, and it is no uncommon thing to see a lady with paste studs twinkling in her ears at ten o'clock in the morning. Again, it is by no means good taste to wear on the same occasion a mixture of precious stones or metals, which gives an ostentatious appearance to the simplest costume; besides which, they cannot fail to clash with one another. Thus, a silver necklet, a gold stone brooch, and oxydised bracelets are not unfrequently loaded on all at once, but the individual beauty of each is entirely lost. Nowadays few people remember the emblematical significance that was originally attached to the jewellery they wear. This is markedly shown in the frequency with which opals are chosen for an engagement ring; the "unlucky" reputation they have had for ages past would otherwise certainly cause them to be avoided for such a purpose. Another point to be observed is the putting of trinkets to their proper uses. A brooch, for instance, should never be used unless it actually serves to fasten two loose edges together, such as

those of a collar or of a scarf, or to hold down some of the innumerable folds of a lace jabot or cravat. To sprinkle the front of a dress-bodice with brooches of several shapes and sizes, as is often done, is simply senseless, and gives the impression that the owner is anxious that the general public should see and admire all the trinkets she possesses. It is the same with rings; no surer sign of a vulgar-minded woman or a *parvenue* can be found than loading the fingers with rings, which is often done to such an extent that it is a problem as to how the owner manages to move the joints.

Considering the advance that has been made during the last few years in the manufacture of jewellery, there should be little difficulty in choosing good designs for brooches, clasps, chains, and other objects of personal adornment. Some of the best of these are copies of antiques or of historical jewels: others are replicas of the jewellery worn by the peasants of various countries, which is often very beautiful and characteristic in design. Much elaborate workmanship, again, is to be found amongst the metal work imported from India and other Oriental countries. Specimens of the common house-fly are popular, and, though rendered in a manner that makes them marvellously true to Nature, are scarcely pleasing objects when used as ear-studs. Such subjects as a newly-hatched chicken with its broken egg-shell poised on a merry-thought bone, or a cat toying with a mouse, and similar fashionable frivolities, are merely degradations of the noble old art of the silversmith. Representations of the human figure, too, are rarely successful in jewellery; and fortunately the days are gone—never, it is to be hoped, to return—in which the miniature of a departed relative, or an elaborate arrangement of hair in a heavy gold setting, was looked upon as an ornament both fitting and to be admired.

Ornamental jewellery to be worn in the coiffure should be sparkling, but in no way heavy. Neither should it partake of the opposite extreme, and be so slightly poised that at every movement of the wearer it trembles and quivers, giving the idea that she is—for the time being, at any rate—afflicted with palsy. The theory that the character is to a great extent to be judged by the dress, is borne out by the fact that these restless ornaments are rarely seen in the bonnets or in the hair of those women whose brain power is above the general average; but are adopted by those who, though no doubt amiable and gentle enough, are inclined to be weak and silly in disposition. Another most objectionable style for jewellery is that which not only trembles, but jingles, in a manner which reminds one of the accounts of prisoners' fetters. Bangles and *châtelaines* have

this objectionable habit, which renders the wearer surely a burden to herself as well as to those who have the misfortune to be in her company.

Perfumes.—Another way in which a woman may render herself objectionable to those around her, is by the too-abundant use of perfumes, and more especially those which are of not a particularly good quality. This excessive use of scent is ever associated with vulgarity, and as often as not inclines one to the belief that the person who is thus over-perfumed wishes to overpower some unpleasant natural odour. Scent should be of first-rate quality; good lavender water is perhaps a general favourite, but should be so used that it is impossible to localise it, owing to its subtlety and delicacy. Many women who are particular on this point make a number of tiny sachets, filled with cotton-wool, plentifully sprinkled with perfume powder. These they sew into the bodices of dresses and into their mantles and jackets. Others believe in the plan of sprinkling petticoats and skirts with perfume. As a perfume for linen, nothing can be more agreeable than the old-fashioned lavender flowers, which are always associated with country houses and gardens, and whose use has been described in a former article. The perfume given out by these blossoms has the advantage of being as pleasant and free from disagreeable taint at the end of a year as when they were first gathered, whereas the manufactured scents too often fade off into a sour smell, which renders them anything but delicious.

Accessories of Dress.—No woman, or man either, could be considered well-dressed who is

habitually seen with buttons missing from boots or gloves, or who, in the case of a woman, puts on her clothes as if her shoulders were merely pegs on which they had to be hung, and never looks as though they were comfortable or appropriate. Even with an umbrella or sunshade, there is much to mark the breeding of its owner. Few people who are particular as to their personal appearance care, as a general rule, to carry an umbrella unfurled instead of neatly rolled up, or *minus* an elastic or button with which to keep it closed. There is something very characteristic also in the way in which this useful accessory of dress is managed, as any one may find who studies his fellow-creatures. We all know the aggressive woman who elbows her way along a crowded thoroughfare, quite heedless of the stray pokes and knocks she distributes with her umbrella amongst other wayfarers in her progress; and the foolish one, who, in an omnibus or railway-carriage, allows passengers continually to trip over or knock down her sunshade, without having the sense to move it into some less inconvenient position. These bad habits often arise more from thoughtlessness than from ignorance, but those who have once discovered the mistakes they are making, can learn to be doubly careful in future.

A touch of colour in the wrong place, awkwardly-arranged pleats or folds, a loop of braid hanging loose for want of a stitch, the place of a missing hook supplied by a pin, all tend to form a jarring note in an otherwise harmonious whole. Coleridge has told us that "the old definition of beauty in the Roman school of painting was 'multitude in unity'; and there is no doubt that such is the principle of beauty" in the matter of dress, almost more than in anything else.

TEA, COFFEE, AND COCOA.

TEA is, comparatively speaking, a modern invention. A hundred years ago it was a luxury which the poor never tasted, while the middle classes drank small-beer at their breakfast. Tea is now one of the necessaries of life, and proves the truth of the statement which we have before made, viz., that the luxuries of one age will often turn out to be the necessities of the age that follows.

Effects of Tea.—Tea is a *drug*. It is generally held to be harmless, though many medical men are fain to believe that it is the root of many a form of nervous disorder and nervous debility, which are the fashionable diseases of the day. There is, in fact, just

as much harm in taking tea to excess, as there is in taking anything to excess—the poison being none the less sure because it is slow. However, far be it from us to have a word to say against "the cup that cheers, but *not* inebriates," except that, like every other article of food, it requires moderation; and the general advice holds good even here, "Put a knife to thy throat if thou be a man given to gluttony."

The principal constituents, besides the woody matter and cellulose, which of course form the bulk of the leaf, are theine, a fragrant volatile oil, to which it owes its aroma and flavour; and tannin, a strong astringent drug. It has been found that theine promotes the secretion of bile, and thus may

be a real help, independently of its stimulating effects, to those who lead sedentary lives, or have insufficient food; but the tannin is injurious, hardening the coats of the intestines, and leading to habitual constipation, which, there is no doubt, is largely due to tea-drinking. The question arises, Cannot we have the fragrant and beneficial constituents of the tea, without the tannin? We can, very easily, if we remember that the theine and nearly all the volatile essences are extracted within the first few minutes of soaking in boiling water, while the tannin requires a longer time to extract—many hours to extract it all. On the other hand, a great deal of the “colour” belongs to the tannin alone. Therefore, if we drink the tea after ten minutes’ standing, we get nearly all the real “goodness” there is in it, with scarcely any tannin; but if we let it stand on the hob, or over a burner—much more if we boil it to get colour and more apparent strength, and an *astringent* flavour (which we may get to desire as much as any other taste)—we are then preparing a strong decoction which is in reality steadily *tanning* our internal viscera. After only five minutes’ standing is still better than after ten; but many people say they cannot afford to pour it off so soon. Tea is now cheap, however, and we recommend the reader just to *try* tea so prepared for once, using plenty of leaf.

Kinds of Tea.—The requisites for a good cup of tea are—tea, boiling water, and a tea-pot. First of all, with regard to the tea itself. There is a limit to cheapness, and it is unreasonable to expect to make good tea if we buy it at a price which has been proved over and over again, by the most respectable tea merchants in the country, to be incompatible with its being genuine. In order to meet the demand for cheapness, exhausted tea-leaves are dried and coloured, and are used to adulterate tea of the cheapest kind. This is not nearly so much done now, however, owing to the greatly-lowered price, as good a tea being now obtainable for two shillings per pound as was sold for five shillings in the year of the Great Exhibition of 1851, to go back no further. This great cheapening is partly due to continuous reduction in the duty, but quite as much to the growth of a new tea industry in the British colonies of India and Ceylon. The herb in these countries, and especially in Ceylon, develops its special properties in increased degree; so that, as the Chancellor of the Exchequer has pointed out, if a given weight of Chinese tea will make five quarts of infusion, the same weight of Ceylon or Indian tea will make seven quarts of equal strength. Consequently, while years ago the imports of tea were almost exclusively from China, less than half our tea now comes from that source, and

the quantity is still steadily declining, while the Indian trade increases. Some of these tropical teas are, in fact, too strong to be pleasant, and a great deal of the China tea is simply used for blending this extra strength into a more palatable moderation.

Making Tea.—Tea, then, is properly an infusion, and consequently it is not worth drinking when it has been boiled, as is sometimes done at cheap public assemblies, where the tea is boiled, and coloured by the addition of a little caramel, which gives it the appearance of a strength it does not possess. It may be urged that, in one sense, by boiling tea you get all the goodness out of it. But then the tea is not the better, but rather the worse, for this operation, owing to the causes mentioned above. This sort of “goodness” is, in fact, badness, and destroys our digestion.

Good tea is only to be obtained by having the water thoroughly boiling, and the tea-pot thoroughly hot and clean. This question of cleanliness in tea-pots is one too often overlooked. As a rule, tea-pots are round and old; stale and used-up tea-leaves have a tendency to settle and stick to the upper half. Those who doubt this would do well occasionally to descend into the lower regions, and carefully examine the so-called clean tea-pot that has been put by for the next morning’s breakfast. By placing their fingers in the pot, and by scraping the upper half, too often stale leaves may be extracted, in which case, if they require a really good cup of tea, they may say, as of old, “There is death in the pot.” Some tea-pots are made of metal and some of china. The metal tea-pot is far superior to the china one, the only objection to it being that it gives more trouble to keep it clean both inside and out.

In making the tea, the first point to be borne in mind is to get the pot so hot that you can scarcely touch it: indeed, it often improves the flavour to let the tea rest *dry* in the hot pot in front of the fire for several minutes, and before any water is poured on. Next, having placed in the tea (the old-fashioned rule for which, with regard to quantity, was one teaspoonful for each person and one for the pot—supposing, of course, they were all grown persons), the water must be boiling—*i.e.*, the steam must be escaping either from the lid or the spout of the tea-kettle. The water should be thoroughly boiling if at all hard, as water that has long boiled expels much of the carbonic acid and deposits much of the chalk, making it softer. Having poured the boiling water on the tea, it is advisable to place what is known as a cozy over the tea-pot. Even in this simple operation we come to disputed points. Some persons fill the tea-pot up at once, others only pour a little boiling water on the tea, filling it up afterwards. If the water is really boiling, the best

plan is to fill the tea-pot right up at once, for the simple reason that in this way we get the real and desirable "strength" of the tea out more quickly. Very often, making tea the first thing in the morning is an operation performed under circumstances that servants are apt to call "a drive"—*i.e.*, they did not get up sufficiently early to have the kettle boiling in time. But without boiling water you cannot have good tea.

It is a great mistake to let the tea, when made, stand too long. If it does, the infusion will be darker in colour, but will have a bitter taste, and that bitter taste is the tannin: we cannot repeat this fact too often. Expensive and really high-class tea may be allowed to what is called "draw" for ten minutes; but the cheap tea, which is now almost universally used, should not be allowed to stand for more than five, otherwise it will lose its aroma. Really the Chinese plan of only pouring on water enough for one cup at a time, is more wholesome than keeping a tea-pot in use for half an hour or more, as is so often done in Europe. The reasons have been fully explained. Vessels made on the percolative plan, in which the boiling water runs through at once off the leaves, are free from this objection.

One important and disputed point is, Should you put a pinch of carbonate of soda in the tea-pot, or should you not? the addition, of course, being made to the tea itself. A good deal depends upon the quality of the water, whether hard or soft. Londoners will often call to mind the enormous difference they find in washing their hands for the first time in the country. It seems as if, although they use it but sparingly, it is impossible to wash the soap from off their hands preparatory to drying them. This is on account of its being rain-water; and when water of this description is used for making tea, the addition of carbonate of soda is not only unnecessary, but absolutely baneful. But, on the other hand, should the water be hard, a little carbonate of soda is often advisable, the danger being, especially with servants, that too much is apt to be added. The aim to be desired is to let the water approach as nearly as possible to pure rain-water.

Different people like different flavours to their tea. Perhaps one as generally a favourite as any is obtained by keeping a small canister of Orange Pekoe, and adding a little to the usual stock which may be purchased. Another flavour—which some drinkers think exquisitely delicious, while others dislike it—is a rather common one in Spain, and is obtained by adding, at the time of making, a few fresh sprigs of lemon verbena. Those who seek new flavours might find this worth trying; the aroma, at all events, is very enticing. Tea kept in store should invariably be put into a well-fitting canister,

and in as cool a cupboard as possible, heat having a tendency to liberate the volatile oil. It is for that very reason we advise putting the tea into a pot made previously as hot as possible, or leaving the pot with the dry tea in it for a few minutes before the fire.

The Chinese take their tea neat. The Russians prefer a slice of lemon, with very often something else, that makes it an inebriating as well as cheering beverage. Many old country dames have a strange preference for coarse brown sugar, with no milk. To our fancy, there is nothing like the flavour of really good tea, with a faint suspicion of Pekoe about it, with genuine *cream* and sugar to taste, and made with the verbena mentioned above. A cup of such tea, in a *thin* cup of delicate china, is nectar fit for the gods. It is wonderful the difference a thin or thick cup makes to the taste.

Tea is prepared in peculiar forms for various reasons. It can be obtained with great part of the tannin extracted, and in some cases tea thus prepared has been used without unpleasant symptoms previously experienced. For travellers it is compressed into bricks or tablets, which can be wrapped in tinfoil, and carried about for use. And quite lately tea has been prepared in balls, ready mixed with milk and sugar, which only need to be placed in a cup, and to have boiling water poured upon them, to produce at once "a cup of tea." We have, however, had no personal experience of the latter invention.

For a very early breakfast, tea may be made overnight, provided it be poured off the tea-leaves into another vessel. It will then keep perfectly well, and may be warmed up; as it is only standing on the leaves, soaking out the tannin, which produces unpleasant results. Cold tea should always be poured off in the same way, and is then a most wholesome and refreshing beverage. Some people even prefer their ordinary tea taken cold during the hot summer months.

Coffee.—We next come to consider the question of coffee. As a rule, it will be found that it is as difficult to get a good cup of coffee in this country, as it is to get a good cup of tea abroad. Probably, of late years an improvement has taken place in both respects. The number of persons who now travel is so great, that we have succeeded in not only teaching foreigners how to administer to our wants, but we have learnt from them, in return, many things that we did not know before. Indeed, complaints have been made of late years that the standard of excellence of a cup of Parisian coffee has lowered very considerably. An article to this effect appeared in the columns of one of the leading daily papers, which is noted for its occasional amusing and interesting articles on the subject of cooking.

In making coffee, there are two things to be aimed at—the fragrance, and the colour. A good cup of coffee should not only have an excellent aroma, but should be perfectly black. First with regard to the aroma. Coffee, to be good, should be freshly roasted and freshly ground, and it is in these two respects that English households generally fail. The great majority of people buy their coffee ready-ground at the grocer's, and very often will ask for a mixture containing a little chicory. When this is the case, it is very important that they should only deal with grocers whom they feel to be thoroughly trustworthy, as there are plenty of cases on record where this so-called mixture of coffee with a little chicory, has really meant a mixture of chicory with a little coffee, the proportions, on being analysed, having been found to be eighty-five parts of chicory to fifteen parts of coffee out of every hundred. Of course chicory is much cheaper, and is utilised really as a colouring agent. When used in very small quantities—such as a couple of ounces, or rather less, to every pound of coffee—it does not do much harm. However, it does impart a slightly bitter flavour to the coffee, and on this account should be used very sparingly, though some people like it for that reason. There is, however, very little doubt that upon the whole the gradual decline in the consumption of coffee in England during late years is greatly owing to its common mixture with chicory, and this for very substantial reasons. The beneficial effects of coffee are solely owing to the caffeine which it contains, and to the volatile oils which give it fragrance. Chicory is quite destitute of both of these, and is so far inert and useless; but it has been proved, beyond this, to be absolutely unwholesome in more than a small quantity, having a direct tendency to produce headache, heartburn, cramps in the stomach, constipation with intermittent diarrhoea, and other ill-effects on the nervous system. It is highly probable, in fact, that much of the ill-effects which many people complain of when taking coffee, are really due to the chicory entirely, and would not be felt were they to return to the good old plan of grinding freshly-roasted berries for themselves. It is not a bad plan, however, to have a small tin of chicory in the house, and, buying your coffee freshly roasted, to grind only enough for what you want to use, then adding a teaspoonful of the chicory to every eight teaspoonfuls of this freshly-ground coffee.

The most delicate-flavoured coffee is made from the very best Mocha, that has been freshly roasted, only roasted pale. Here we have to face a difficulty, for it is almost impossible to get perfectly black coffee from berries that have been roasted very pale. Some people use two kinds of coffee. First of all, a coarser kind, that has been roasted very black,

is used to obtain the colour. This is allowed to stand some time, and strained or cleared with white of egg until it is bright. Then this bright black liquid is boiled up, and used, exactly like fresh boiling water, with some delicate, freshly-ground, pale-roasted coffee. By this means you attain both ends—blackness and aroma. There is one more point of equal importance, which is—that the coffee should be bright. This will depend a great deal upon the coffee-pot. As a rule, the ordinary percolator will be found to answer every purpose.

In grinding coffee, those mills should be selected which grind somewhat coarsely, while the coffee-mill should never be used for any other purpose. Some of the old-fashioned methods of making coffee were peculiar. It has been recommended that coffee should not be ground at all, but that it should be pounded with pestle and mortar, then placed in a hot jug, boiling water poured on it, and a cloth put on top. The jug is then set on the hob, and the liquid allowed to settle. This is a far better method of making coffee than many people imagine, and should it happen that there is no coffee-pot or mill (and this will sometimes occur in out-of-the-way country places), it is as well to bear in mind that coffee can be made in this primitive fashion very well indeed, if you do not stint the coffee.

A good deal of the bad—or, rather, poor—coffee that we meet with in this country, is owing to the fact that people do not put in sufficient. In making tea for five persons, we should allow as a rule six teaspoonfuls. In making coffee, double this quantity is necessary if you wish the infusion to be really good. Now, many persons treat coffee almost as if it were tea; of course they cannot expect any very brilliant result. Practically, tea and coffee are really about the same price; for although coffee is so much cheaper, as you use double the quantity, the result is the same.

Another old-fashioned way of making coffee, and by no means a bad one, was to have a coffee-pot with a bag at the top. The coffee was then made in the dining-room like tea. The first thing was, of course, to make the coffee-pot thoroughly hot; and this was a matter too often neglected by servants, who will not take the trouble. The coffee was placed in the bag, and then the boiling water poured on it. It used to take a short time for the water to run through, and then a little more boiling water was poured into it. In making coffee, if you do not mind the trouble, it is very economical to boil the coffee-grounds one day, and to let the mixture get perfectly bright, and then use this instead of the boiling water to make some fresh coffee the next day. But of course, in small families it is scarcely worth while. In large establishments, and often on

board ship, burnt bread is used to make the coffee black. It cannot be called adulteration, as it is perfectly harmless. In other words, you make your infusion with coffee and toast-and-water.

When the coffee has been made, it is taken in two forms—*i.e.*, with milk for breakfast, or pure black coffee after dinner. When coffee is taken with milk, it is of very great importance that the milk should be boiled. We have constantly called attention, in speaking of matters connected with cookery, when milk and cream is added, of the importance of boiling this milk and cream separately: for instance, in making white soup of every description, or Béchamel sauce. The difference in the taste of coffee that has been made with boiling milk, and the coffee that has had cold milk added to it, is so great that it illustrates the importance of the directions given. Some people maintain that the milk should be placed in the cup first, and then the coffee added, and that it will taste better than if the coffee were put in first, and then the milk on top of it; but we cannot help thinking this is all fancy. To be really good, the coffee should be made very strong, so that you can nearly three parts fill your cup with milk that has been well boiled, then pour in the coffee, added to it so strong that the whole cup looks like a good one. Coffee made in this way, with three parts milk, boiled and hot, is far the best beverage for breakfast for most average people, being much more nourishing and sustaining than tea.

Of all the many articles of food that we take, there is none perhaps to which the remark "little and good" applies with greater force than to coffee. When good, it is so *very* good; and when poor, it is so *very* poor. What a miserable compound is the coffee that pours out like tea, or which, owing to its not being bright, when added to milk, gives it a muddy appearance, and when we come to the bottom of the coffee cup, the last tea-spoonful looks like mud! It would be more really hospitable to offer your guests a glass of pure spring water to drink.

A very convenient form of having a cup of coffee at a moment's notice is coffee extract. You require a good deal of the essence to make the coffee really good; but a small bottle in the house, to be used on emergencies, will be found very handy.

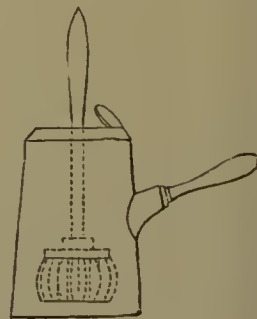
Cocoa.—After tea and coffee naturally follows cocoa. It is difficult even to approach the subject without thinking of "grateful, comforting," just as for many years marmalade was inseparable from the idea of "an excellent substitute for butter at breakfast." Be this as it may, in the opinion of many persons cocoa is a very excellent substitute for coffee at breakfast. Cocoa is, with very good reason, supposed to be nourishing. There are a

large class of people who live the most temperate lives, who labour under the delusion that an enormous amount of nourishment is necessary for their existence, and who, consequently, die before their time from over-feeding. Probably they would enjoy better health if they were every now and then confined to a diet of bread-and-butter, washed down with some good spring water. But there is no doubt that cocoa, for young children, is far better than either tea or coffee, and is an admirable medium for conveying milk, which probably would be otherwise rejected.

Cocoa can be taken in various forms, the first of which is cocoa nibs. These nibs require a lot of boiling; about a quarter of a pound of nibs would require some three quarts of water. They should be boiled gently for about a couple of days, to get all the nourishment, by which time the three quarts of water would probably be reduced to three pints. A good deal of oil comes out of the nibs, and in the case of sick people this may be skimmed off; but in the case of people who do require a lot of nourishment, it ought to be left on. This cocoa requires mixing with boiling water, like coffee, to be nice.

Then there are numerous different kinds of what is known as prepared cocoa. This is mixed with boiling milk or boiling water, as the case may be, and will very often turn thick. This thickening, however, is not due to the cocoa itself, but to some kind of flour added to it, such as corn-flour, arrow-root, &c., to meet the public demand.

Chocolate is really another form of cocoa. The cocoa nibs are ground, and pounded with sugar and vanilla, the richness of the chocolate depending to a great extent upon the amount of vanilla in it. Vanilla is one of the richest ingredients added, but it is also very expensive. Vanilla, when sold in sticks—or, rather, as they are called, vanilla pods—runs into a lot of money, the wholesale price being close upon two guineas a pound. Chocolate, consequently, can be made at prices varying to almost any amount. If you want to give a friend (for instance, we will imagine a French count or countess to be staying with you, to whom a cup of chocolate corresponds with a cup of tea, which all English ladies enjoy in bed in the morning) a choice cup, it will be found cheaper if, instead of buying the most expensive chocolate, you buy instead the ordinary chocolate, and then add the vanilla yourself.



CHOCOLATE-MILL.

To serve chocolate in perfection, requires what is known as a chocolate-mill. This has to be turned with the hands, and the effect is to cause the chocolate to froth. The diagram explains what is a chocolate-mill better than words.

On an average, you want about half an ounce of chocolate to each person, and each such portion will require about a quarter of a pint of water and the same of milk. You make the milk and water hot, scrape the chocolate into the pot, pour the boiling milk and water upon it, and mill it over the fire or hot-plate till you have worked up a good frothy head upon it. Chocolate, as a drink, is not really popular

in England. Like sweet champagne, it suits the French palate better than the English. It is, however, a favourite drink in Italy and Spain; while even the Germans drink a great deal more of it than we do.

What is called "eating chocolate," if *plain*, is a wholesome and very portable food. A cake or two in the pocket of a cyclist, or pedestrian, or horseman, occupies no space, and will stay the stomach and keep off faintness for hours, until more substantial fare can be obtained. The rich chocolates and creams, on the other hand, are most unwholesome, and will be eschewed by all but silly children and school-girls.

GARDENING FOR SEPTEMBER.

Shrubs and Trees.—Any of these that it is deemed inexpedient to remove (fir-trees and their allies excepted), yet are making too strong a growth and encroaching upon their neighbours, may now be root-pruned. This, in most cases, will be found to be effectual by merely thrusting a sharp-edged spade down as deeply as possible all around the plant at a fair distance from the stem. When this is found not to cut the roots sufficiently, some soil should be taken out, and then the same operation performed again. In this manner a check will be given, which in nearly every case will be found to answer the purpose, and that much better than by frequently restricting the top growth until quite a stubby appearance is given. The general moving of shrubs had better be postponed until next month.

Herbaceous Plants.—Some of the most useful things amongst this fine race of garden flowers bloom during this season of the year. Note should be taken of any that are seen which are not already possessed, and later on they can be added to the collection from either seed or roots. Where any are now in full beauty, an occasional watering will greatly help them, if rain has not lately fallen. Those which have ceased to flower should not be allowed to ripen any seed, unless in any special case, for it weakens the plants for the next season. This same remark applies with equal force to all bulbous plants, such as Lilies, &c. Propagation by division may be done towards the end of the month in any desirable case. This sometimes happens to be necessary, as in the event of a removal, when all of the plant is not needed by reason of its size and weight. Ferns can be moved when the foliage is matured, if needful, by taking the precaution to reduce the fronds by shortening, thus to act as a corresponding

check. They should, however, be re-planted as soon as possible, and then well watered, as well as otherwise carefully attended to. The Pampas Grass will soon be throwing up its handsome heads; if the plants are growing in a spot at all dry, two or three good applications of water would help to strengthen the spikes and assist the plumes to arrive at a better state of perfection. If any are required in a cut state for arranging in vases during the winter, they should be secured just before they are fully grown. Taken thus, and dried, they will be of a better colour, and not so much disposed to fall to pieces, a little at the time. When they get dirty and dusty, they will bear being washed in warm water with soap and soda, afterwards dipped in clear water, and then dried.

The Lawn.—The mowing will not require to be done quite so frequently, and when it is done it must not be commenced quite so soon in the day, by reason of the heavy dews, or a smeary appearance will be left afterwards. The work, too, is much harder when the grass is heavily charged with moisture, which is a consideration, for even the best of machines work none too easily. The machine will also need a little extra attention when it is dirty. After the mowing is finished, it should be swept as clean as possible, or, if very dirty, it may be partially washed to remove the dirt. See that neither the front rollers (if any) or the cylinders are coated with worm-casts, or it will cause the machine to work unevenly. More frequent sweepings will now need to be done, to keep the lawn clean and free from leaves. It is never advisable to do this work when the wind is blowing hard, or there will not be much to show for what has been done. By the end of the month any repairs that may be needful to the turf should be seen to;

time will thus be secured for it to get well settled before the autumn rains and frosts set in. After a heavy rain the roller should be freely used upon any uneven places, and also upon the tennis-ground on frequent occasions, especially if played upon frequently or newly made.

The Flower Beds and Borders.—More attention will now amply repay itself in hand-picking the decaying leaves and flowers; with longer nights and more moisture this is an essential point to observe, for cleanliness and good keeping will greatly enhance the attractiveness of the garden. Geraniums will require as much, or more, attention than most things in this respect. Watch all plants that are being supported by stakes and ties; after a high wind it often happens that some tie may have given way and need renewal. The borderings to the flower beds should be kept each within its proper space, and all overcrowding be avoided as far as possible. Plants that have ceased to be of any utility, chiefly such as annuals, should be pulled up and thrown away. Some Wallflowers could take their place at once if any great vacancy is created. The faded flowers should be cut off the Dahlias; this will also remove the seed-vessels, and tend to strengthen the backward blossoms. These and any other plants of strong growth will still need some water at the roots in dry times to keep them in good growing condition. Vases, &c., with plants in them, must not be overlooked; the occupants of such as these will now have accumulated a quantity of roots, and need additional sustenance to keep them in a healthy state a while longer.

Geraniums.—Those that were recommended to be propagated last month will require looking after for an *occasional* watering, and for the removal of any decaying foliage. When this is being done, the soil may be gently stirred upon the surface if it has become hardened. If any flower trusses are pushed up, they should be picked off before the flowers open. In the event of a sufficient number not having been inserted, or if any have died off, some more should be put in as soon as possible. Shoots of moderate vigour will be preferable to those that are extra strong, striking with more reliability and making better plants afterwards.

Cuttings.—Cuttings of nearly every other kind of bedding plants that are kept from year to year by propagation, will strike very well during September in a cold frame. Six-inch pots are quite large enough for this purpose—better, in fact, than larger ones, for a great amount of soil is not needed in the winter, otherwise the roots would be more likely to perish.

A sandy soil should be prepared for this purpose, but not enriched with manure at all, as a luxuriant growth is not necessary. Plenty of drainage should be placed upon the bottom of each pot, the soil then being pressed down firmly, and a surface coating of sand added to the depth of half an inch. A watering should then be given through a fine rose, and the pots allowed to stand for a time before the cuttings are inserted. A few of the lowest leaves should be trimmed off, and in the case of any cutting with rather long leaves the rest should be shortened. After this has been done, no time should be lost in putting them into the pots, pressing each one firmly into the hole made with a small dibber. Another watering should then be given, to settle the soil around the cuttings; after this has drained away the pots should be stood in the cold frame, nearly close together, upon a bed of coal ashes. When the sun is shining brightly, a slight shading will be required to prevent the cuttings from suffering. At such times hardly any air is needed, the most being given early in the morning, before the sun gains much power: this can be reduced when the shading is applied. A slight sprinkling in the morning when the first air is given will nearly always do good (damp mornings being excepted), and another light sprinkling in the afternoon when the shading is taken off. Watch closely for any decaying leaves, and remove them, without disturbing the cutting, as soon as seen; and do not allow any flowers to unfold, and thus weaken the young plants.

Some of the chief things for striking now are the blue bedding Lobelias, which, when increased from cuttings, give plants of uniform growth and colour; Verbenas can also be struck freely, selecting shoots that are not affected with mildew. *Gazania splendens*, a useful plant in hot and dry situations; *Cuphea platycentra*, an old-fashioned border plant; *Mesembryanthemum variegatum* (the Variegated Ice-plant), always handy as a bordering to flower beds; the Heliotrope, always appreciated for its perfume; the Ageratums, of dwarf habit and pale lavender-blue flowers; *Koniga variegata*, the Variegated Alyssum; the Lemon Plant, or sweet-scented Verbena; the Tropæolums and the Marguerites, or Paris Daisies, with other similar plants that can be wintered in a greenhouse, can all be struck as previously recommended. Then, should a frost come somewhat untimely, and cut short the beauty of, and possibly severely injure, the older plants that up to that time have done good service, the younger ones under protection may be relied upon to succeed them another season. The old plants, if taken up and potted, always occupy more room (Geraniums excepted), and do not look so neat and tidy as the small plants when kept in store-pots for future use.

Calceolarias should not be propagated from cuttings before October, but as we are now treating upon such things in general, it will be as well to include them. These valuable bedding plants are propagated very easily and with little attention if the following mode of procedure be adopted:—As soon as the other cuttings are fairly well struck, and fit to be moved into a greenhouse, which will be about the second week in October, the frame should be got in readiness, or a part of it, to receive the Calceolarias. Some fairly good soil, not rich, should be spread over a portion of the surface, which, when finished for the cuttings, should be about nine inches from the glass. This, after being pressed down, covered with sand, and watered, is ready to receive them at about three inches apart each way. The cuttings should be taken from the side shoots near the base of the plants, as these strike more freely. After all have been put in and watered, the frame should be kept close for a week or ten days, after which a little air may be admitted in favourable weather. The plants may remain in the frame all the winter, only needing to be protected from frost by a covering both at the sides and upon the glass. Pots are never needed for Calceolarias at any time; in fact, they are best grown without their aid when intended for bedding purposes only.

Chrysanthemums.—Where disbudding is practised in order to obtain finer blooms, it should be all completed by the middle of the month. In performing this work, the most promising buds should be retained: this will generally be the central one of each shoot, unless injured in some way, or growing out of shape. We do not advise this work to be done excessively; but by the removal of some, those left will be all the stronger. Side shoots must still be removed by pinching them off whilst quite young. Extra ties will be required in some cases for greater security, the wind often blowing strongly at this season of the year, and sufficiently so in exposed situations to snap off the tender growths of the tops. As soon as any of the earlier ones begin to show colour, they should be removed under cover, in case of a slight frost catching them, or injury being caused during heavy rains. The harm that is done, if this be neglected, is not seen at the time, but later on the outer or guard petals will be found to be deformed; this will cause the flower when fully opened to be imperfect, often not lasting so long either, through decay setting in prematurely. Assistance with manures must be continued, and watering looked after closely—hardly so much will be needed, but never allow them to suffer. Arrangements should be made beforehand for the entire stock of plants to be got under cover before the first week in

October is at a close; later than that the plants are not safe outside. Those who grow Chrysanthemums in the borders with the shelter of a wall should see that the shoots are kept as close as possible to it for protection; thus, with a little extra attention a good number of blooms may be cut for decoration in the house, and save cutting those in pots.

Roses.—For a few weeks to come there will not be much particular work to do amongst the Roses. Mildew will continue to be troublesome, and should be checked as previously advised; it will now be found to attack the wood of more mature growth, as well as the points and foliage; sulphur will, however, greatly prevent its spreading. Keep all suckers from the stocks removed in an early stage—those issuing from the roots should be partially pulled up, and then cut off. Cuttings of half-ripened wood about six or seven inches long may be taken off early in September, and inserted out of doors, as recommended for Pinks. They should receive occasional moistenings in dry weather to preserve their vitality, but not be disturbed in any way until the following spring, when it will be seen which have taken root and promise well for growing. Those that are not so forward may make a start also later on.

Culture of Bulbous Plants.—Under this heading we will treat more particularly of Hyacinths, Tulips, Narcissi, and the like, which are so generally grown by far the greater number of those who take delight in the culture of flowers. The Hyacinth is without doubt cultivated more extensively than any of the rest, and most deservedly so, all points considered. The culture of this and the Narcissus or Daffodil has increased to an immense extent of late years, and, thanks to the corresponding increase of those who compete in offering them for sale, they may now be bought of good quality at a most reasonable rate. This, combined with their comparatively easy culture, should make them even more popular than they are at the present time. The culture of all bulbous plants in pots is brought to a more successful issue when purchased and potted early in the season. By this means a longer period is allowed them wherein to develop a good proportion of roots before hardly any active growth is apparent. The roots being thus in advance, so to speak, are better calculated to sustain the leaves, and afterwards the flowers, in their full vigour. If, on the other hand, any are unfortunately potted after they have commenced to grow, there must of necessity be a much inferior result in flowers. We feel it important to mention this matter as one of the most essential points to observe. That it is frequently overlooked there can be no doubt, and if carried too far, is the

cause of many a failure to produce flowers worth the name. In every possible case bulbs should be purchased during September, the middle of the month being a good time. The potting should be completed by the end of the month. It may be postponed ten days or a fortnight later where there are conveniences to winter the bulbs under the protection of a frame, but not otherwise.

The soil best suited to Hyacinths and Tulips is one that is rich and light: one-third each of the following—good turfy loam with plenty of fibre, well-decayed manure from either the farm-yard or the stable, and either road-scrappings or sand with a little well-decomposed leaf-soil. This should all be well mixed together, and whilst being done a sharp look-out should be kept for any worms. The common earth-worm is readily discerned, but the wire-worm is not so readily observed, being so much smaller, and more to be avoided by far, as it preys upon the young roots when they commence to grow, whereas the first-named more generally causes the soil to become sodden and close, if existing in any quantity. The wire-worm is a small yellow-looking kind, about an inch and a half long, with a tough and somewhat hardened exterior; it is generally to be found in the loam. Should good loam be difficult to obtain, the trimmings from the road-sides of country and suburban roads contain nearly all the requisite elements, but ought to be laid up for six months before being used, so that any weedy growth may be killed. Narcissi and Daffodils will grow in a rather poorer soil; loam of not so good quality and less manure will suit them very well.

See to it that the pots are all properly cleansed before being used, and place a good quantity of drainage in each. Upon the top of this drainage add a little of the roughest of the soil, and fill up about half-way, or a little more, with the other portions of the mixture. Then, in the case of Hyacinths, one bulb should be placed in the centre of each pot, and some more soil added, so that the top of the bulb can just be seen above the soil, which in every case should be pressed down firmly with the hands. In the case of Tulips, three bulbs placed triangularly is a better plan, whilst of Narcissi or Daffodils the number must be regulated according to their respective sizes. Some are larger than Hyacinths—these should be potted singly; others of medium size may be treated as the Tulips, whilst others may be placed five in a pot. When Crocuses are cultivated in pots, about six bulbs in each are ample, whilst of Snowdrops ten or a dozen may be employed. Both of these latter well-known bulbs do remarkably well in pots, and are very accommodating as to the quality of the soil. Only this last spring the writer was shown some pots of Snowdrops which were models of good culture,

and that success had been attained under no favourable conditions, either in position or soil. These and Crocuses look very well if a little green moss be placed between the plants when they have begun to grow: it tends to keep the soil moist, and adds to the attractiveness of each one. Other bulbs could be treated in a similar way with advantage, but the plan is particularly well adapted to those we have named.

Hyacinths and the Polyanthus Narcissus can both be grown in water, the former frequently being thus met with in good order. It is a system well suited to those whose means of cultivation are restricted. Some friends of ours, who grow Hyacinths in a most successful manner, recommend the following course: "Fill the glass so as almost to touch the base of the bulb with clear water, putting a small piece or two of charcoal in each glass, as this is of service in keeping the water pure, and gives some slight nourishment at the roots. After having filled the glasses, they should be placed in a cool, dry, dark place for a month, or more, till the roots nearly touch the bottom of the glass, when they may be brought gradually to the light, afterwards giving them plenty of light and air, but avoiding all draughts. Attention is required from time to time to keep a sufficient supply of water in the glass, and in looking over the bulbs while growing to brush off any fungus or decayed skin that may be on the roots or bulbs. The water does not require changing unless it begins to smell offensive or the roots assume an unhealthy appearance. When of sufficient height, the flowers should be supported by a wire to prevent them overbalancing."

The best glasses in which to grow Hyacinths are those known as Tye's, which can be purchased of nearly all dealers in bulbs. The advantage in favour of them is the broader base, which is a better safeguard against their toppling over with the weight of the spike when fully grown. Hyacinths after having been flowered in water are of but little use, and do not, as a rule, pay for any future trouble bestowed upon them. The Narcissi are best grown in larger receptacles than the Hyacinths—shallow vases, or such as are used at times to place plants in pots in, would do very well for them. In such cases we advise some clean gravel of small size, or granite crushed small, to be used in addition to the water. This will support the bulbs in position, and look very well indeed. Water can be added as needful in the case of Hyacinths, and in other respects the treatment would be the same as just given for these.

After all the bulbs that are intended for pots have been potted, some convenient spot where water is not likely to stand after rains should be chosen for them to be stood closely together, and covered over. The

best covering is cocoa-fibre refuse, which is light, and at the same time acts as a non-conductor. Where obtainable, it is generally to be had at a moderate price, and will last at least two seasons for the same purpose. Failing the fibre, cinder ashes may be used, but care must be taken not to use any upon which poisonous or noxious ingredients have been thrown. It is a common practice to make the heap of ashes a receptacle for many things that are objectionable, and particularly so when needed for such a purpose as that in view. We have known ashes to have been used, and failures afterwards to occur, the bulbs often refusing to grow at all, and not assignable to any other cause than that of some poisonous matter in the covering. Before being done with either fibre or ashes, a slight sprinkling of sand should be added upon the surface of the soil; then when, later on, the covering is removed, it will come away clean, and leave the soil intact. This covering is essential in order to promote root-growth in advance of the leaves; it also keeps the bulbs in their proper position. When not adopted at all, the bulbs will often be pushed upwards by the quantity of roots issuing forth around the base of each bulb. And at the same time more watering is necessary, which, when covered, need never be any trouble at all, one good watering after potting being all that is required until the covering is removed. In most cases this will be during January, but in favourable localities and mild seasons somewhat earlier. It can be ascertained if they are fit for removal by examining one or two; should the growth be advanced about an inch, this may be safely done. The pots should be washed clean, and then removed either to a cold pit or cool greenhouse; we prefer the former if sufficient protection can be given them in frosty weather. Some of the forwardest ones of each kind should be encouraged by a little more warmth to make an advance, so as to prolong the flowering season, after they have for a few days been gradually inured to the light. In the case of Hyacinths it is a good plan to place a smaller pot inverted upon the top of the bulbs for a few days, especially if fairly well started, and the flower-spikes prominent. Be careful at all times not to run any risk of injury from frost; a temperature of 35° to 45° will be quite safe. The Crocuses and Snowdrops should be covered more lightly than the larger bulbs, taking four inches as a maximum amount. Some lighter material is needed as a protection in severely cold weather, when there is any danger of the bulbs themselves getting frozen. After growth has fairly commenced, and the flowers are showing themselves, plenty of water should be given, never allowing them to become dry; occasional applications of either manure water or an artificial stimulant will

at that stage greatly benefit the Hyacinths, Narcissi, and Tulips.

Bulbs for growing in flower-beds or borders should be planted towards the end of October, as soon as the plants that have filled the same are no longer attractive. It is well, however, to purchase them in good time; they will keep better in a cool cellar (not too damp) than they will in the more exposed positions in the shops and warehouses. A few hints upon the planting of these will be given in the work for October.

The following are a few good selections of their respective kinds both for pots and the open air. Of Hyacinths we recommend for pot-culture of *singles*, which are better for general purposes than the *double* kinds, General Pelissier, rich crimson, fine spike; Gigantea,* delicate rose, immense spike; L'Ami du Cœur,* bright red, early flowering; Macaulay, rose, very fine; Norma,* delicate waxy pink; Princess Charlotte, rosy pink, large bells; Queen of Hyacinths, rich scarlet; Solfaterre, brilliant orange-red; Von Schiller, deep salmon pink; Baroness Van Tuyll, white, with primrose eye; Grande Vedette,* pure white, early; Grand Vainquer, white, large bells; Grandeur à Merveille,* fine pale blush; La Grandesse, a very fine white, with immense bells; Mont Blanc, fine snow-white, extra bells; Argus, deep blue, with white eye; Baron Van Tuyll,* dark blue, extra large spike; Charles Dickens,* lilac, fine; Czar Peter, pale lavender, large bells; Grand Lilas, porcelain, grand spike; King of the Blues, dark blue, extra; Lord Palmerston, greyish-blue, with white eye; Mimosa,* dark purple; Uncle Tom, bright, shining, almost black, early; Alida Jacoba, canary-yellow; Duc de Malakoff, buff striped with red; La Citronnière, citron, large spike; La Pluie d'Or,* deep yellow. Of doubles the following are reliable kinds:—Blocksberg, clear porcelain; Van Speyk, pale blue; Koh-i-noor, salmon pink; Lord Wellington, pale blush; Noble Par Mérite, light rose; La Tour d'Auvergne, pure white, fine early kind; Sceptre d'Or, white, with yellow eye; Cræsus, orange; Jaune Supreme, canary-yellow. The foregoing are thirty-six good and tried varieties, and all of moderate price, some, in fact, being amongst the cheapest obtainable. Those marked with an asterisk (*) are best suited for planting in beds, &c., and the same mark will denote the Tulips, &c., for the same purposes.

Of Tulips we recommend the following:—Of singles, Duc Van Thol for early flowering in pots, to be had in white, yellow, rose, scarlet, crimson, and striped varieties; Globe de Rigaud,* purplish-slate and white; Joost Van Vondel, rosy crimson; Keizer Kroon,* crimson-scarlet, margined with clear yellow; La Reine,* white, tinged with

rose; Scarlet Pettebakker,* fine for beds; White Poitebakker, pure white; Yellow Pettebakker, clear yellow; Thomas Moore,* orange; Vernilien Brilliant, extra fine; Yellow Prince,* bright yellow; and Corise Grisdelin,* purplish-rose. Of doubles, Rex Rubrorum,* bright red; Gloria Selis, reddish-brown; La Candeur,* fine pure white; Princess Alexandra, red and yellow; Tournesol,* red and yellow, one of the best; and Yellow Tournesol, golden yellow.

Of Nareissi and Daffodils there are now, with the many recent introductions, such an immense number of kinds—so much so as to be quite confusing to those who have not studied them whilst in flower. The following are well-proven kinds of Nareissi *proper*, or Polyanthi Nareissi, so called no doubt from the clusters of flowers, somewhat resembling a Polyanthus; we only name a few, as they much resemble one another:—Early Snowflake, a fine early kind for pot-culture; Gloriosa, pure white, with orange cup; Jaune Supreme, clear yellow; Grand Monarque, white, with citron cup; Soliel d'Or, rich yellow. These are splendid for pot-culture, afterwards to be turned out into the borders for flowering another season. The single "Sweet-Scented" Jonquil, deep yellow, is best in pots. Of these known as Daffodils, the following are well-known kinds for growing in quantity out of doors:—Double Yellow, Campernelle, Pheasant's Eye, Double White, Stella and Nanus. The following are very fine kinds, but somewhat more expensive:—Emperor, Empress, Hersfieldii, Sir Watkin, Princess Mary, and Ard Righ or Iris King.

The Dutch Crocuses are the best of their class for general uses; the "Large Golden Yellow," "Large Blue," "Largo White," and "Large Striped" are good types. The following, in addition, are very fine for pots:—Vulean, dark purple; Sir Walter Scott, white, with lilac stripe; Grande Blanche, pure white. Of Snowdrops, the *selected* bulbs of both single and double kinds are better, and produce finer flowers, being well worth the extra cost. *Anemone fulgens*, the scarlet variety of the "Wind" flower, so much seen in the spring-time, is easy to grow, but should not be disturbed from year to year; when it is well established, it will flower most profusely. The double French Anemones are also very fine; so also are the single "Giant Poppy" varieties, both of which can be had in several colours; they succeed best in a cool moist soil.

The Seillas are charming bulbous plants; the "Sibirica" should be found in every garden: it is a beautiful dark blue, fine for pot-culture, like the Snowdrop, and even more so as a companion to the Crocus and Snowdrop out of doors. *Scilla campanulata*, in three or four colours, flowers later in

the spring, but is equally as valuable for borders, and very hardy also. When bulbs of any kind are selected for purchase, the large ones more particularly, it is important to weigh the bulbs in the hand. Those that are proportionately weighty for their size are always preferable to those which, although of good size, and in other respects clean and good-looking, do not weigh so well when thus tested.

The smaller bulbs of some Hyacinths will often throw finer spikes than the larger ones, being at the same time of a rougher exterior, and not so good to look at. If any purchase is made at auction sales, now somewhat common in the bulb trade, it is advisable to make the purchases well in advance, before they have been so much exposed, for the same reasons as previously given. Bulbs also are offered direct from some of the Dutch houses, but in our own experience we have never found any proportionate gain by this method. Good and reliable houses in this country supply all that can be desired, both in quality and economy.

The Gathering and Storing of Apples and Pears.—The month of September is an all-important time for this work, particularly so towards the close of the month. There are but few kinds of either one or the other of these most useful fruits that are benefited by hanging on the trees, at the latest, any longer than the first week in October. It is not often, however, that mistakes are made in this direction, but far more frequently by gathering them too soon. It must not be inferred that because a few fruit are predisposed to fall rather early that all the rest are fit to be gathered. Far from it; the last week or fortnight that the fruit hangs upon the trees is often of the greatest value, both in respect of maturation and that other essential, the good keeping qualities of the fruit. The latter is closely identified with the former, being, moreover, greatly enhanced when we fortunately have fine, bright, and sunny weather during September. A very good guide as to the fitness of any kind of either Apple or Pear for being gathered is afforded by taking a fair sample and cutting it asunder at the core. If the pips have assumed a brown colour, and are fully grown and firm, the fruit is nearly or quite ready for gathering. A further guide may be had by gathering a few fruits; if these come off freely, without the stems of the fruits breaking asunder, but part properly at the juncture with the wood, that too may be considered a reliable sign of maturity.

In the actual gathering of the fruit sufficient care is not always given; it must not be done with a pull, and that too, at times, of sufficient force to break away a portion of the wood, with probably one or more fruit-buds already formed for another season.

The proper way is to lift the fruit upwards: it will then in nearly every case part freely from the tree, if sufficiently advanced. If much force has to be employed, the operation had better be postponed a few days longer. In the case of large trees it will sometimes happen that the side of the tree most fully exposed to the influence of the sun will be fit to gather a few days before the other; this, too, should be studied. Whilst gathering the fruit every possible care ought to be taken not to bruise or in any way damage it; careful handling amply repays for the little extra time expended upon it, and saves many fruits from premature decay or disfigurement. Baskets which hold about two gallons of fruit are quite large enough for gathering purposes, but in no case is it advisable to have the larger ones, into which they are afterwards transferred, any larger than one pair of men's hands can lift with comfort. In receptacles of extra size the additional weight will have a tendency to bruise the fruit, especially so if of any depth.

After the fruit is gathered, no more time should be lost than is possible in storing it in its proper quarters, and in doing this it should not be handled any more than is really necessary. In the case of specked or spotted fruit, and that which may perchance have been bruised or pecked by birds, a special corner should be given. In no case should it be mixed with the sound fruit, or extra trouble, with additional moving of the greater portion, will be afterwards incurred. All that is in any way damaged, and not likely to keep well, should be used first, so that the sound portion of the crop may be economised for later use. Both Apples and Pears keep best when not subjected to sudden or frequent variations in temperature; too much draught or too clear an atmosphere are both alike prejudicial. So also is a place that is too warm; this will cause the fruit to ripen prematurely, and often shrivel also. A cellar that is not damper than the average is a good place to keep all late kinds; an out-house, or a room that is not needed to be used with a fire in it, will also suit. Cupboards are not good places by any means, being too close, and often too dry also.

For the first week or fortnight a fair amount of air should be admitted; this will tend to keep the fruit dry, and prevent much of the sweating that usually takes place, the fruit appearing as if it had been oiled; this chiefly occurs with Apples. After this goes off, the amount of air admitted to the fruit should be gradually lessened, until it is nearly excluded. Frost should be guarded against just sufficiently to exclude it, taking 35° as the lowest temperature, so as to be on the safe side. After a spell of frosty weather it is a good plan to admit more air as the thaw takes place. Hay should never be used to lay the fruit upon, and straw even is not desirable; the former leaves a

decided taint upon the fruit, the latter to a less extent, but sufficiently to be traced. Sawdust or sand are better when the fruit is stored upon a brick floor; when upon wooden flooring or shelves, a sheet or two of newspaper is all that is necessary. Watch always for any symptoms of decay, and use those fruit first which have any small specks upon them. This should be done as much as possible without disturbing the fruit; when moved, it should be done carefully with the hand, never rolling the fruit over several at a time. Some kinds, especially the clear-skinned Apples, and nearly all of the Pears, are liable to show the slightest bruise on want of care in moving, causing the fruit to look as if they had been badly packed, and then sent upon a long journey. This will more particularly happen as the fruit is beginning to ripen, but more or less at all times, careful handling well repays the little extra trouble occasioned.

Each kind of Apple and Pear should, when used for dessert, be commenced upon rather before they are quite ripe; the season may thus be prolonged with advantage, especially if good judgment is displayed in selecting all the ripest fruit first. It is not a good plan to continue picking out all the finest specimens, thus leaving a poor sample to finish up with. After a little practice it is tolerably easy to judge of the maturity of the fruit and its fitness for dessert by taking it in the hand and gently pressing it with the thumb around the footstalk. If it there yields to the pressure, it may be taken as fit for use. Those who are inexperienced in the handling of any fruit, to test its ripeness generally give it a squeeze in the middle, and thus disfigure it, the bruise afterwards showing when the fruit is pared, to say nothing of decay, which will set in if it is kept many days longer. When there is a quantity of any one sort of dessert Pear, it should be used rather freely, or possibly some portion of the crop will get over-ripe, become soft at the centre, and prove useless. In such cases we recommend that the smaller fruit be cooked by stewing, and thus used up before becoming at all ripe. Apples are not nearly so liable to deceive one in this respect as Pears, but even they after a time lose their brisk flavour; there is not, however, that liability to waste that there is with Pears when not properly managed.

When fruit has to be packed for sending away, it should, if possible, be done whilst it is still firm and hard, and never left until quite ripe if every precaution and care cannot then be bestowed upon it to pack securely. One often hears that fruit does not reach its destination in good condition; if the foregoing advice were followed, there would be less disappointment, if packed fairly well. In whatever receptacle fruit is packed, there should be a little allowance

made for some soft material; paper shavings are as good for this purpose as possibly can be had. Pears, when ripe, require the addition of a wrapping in soft paper, with a layer of the shavings between each layer of fruit, and all vacant spaces well filled in to prevent any movement in transit.

Peaches and Nectarines.—These fruit will be in perfection during September, and will require some attention to prolong the period of their usefulness in good condition. In the case of any one tree with a quantity of fruit upon it, the first few should be gathered by degrees as they become ripe; but as soon as it is seen that the bulk is ripening off, it is a better plan to gather nearly or quite all of them. This should be done in a careful manner, so as not in any way to bruise the fruit, and then lay it upon some soft material, and keep in a cool dry room until quite ripe and required for eating. In this way the produce of even one tree may be kept in good condition a week longer. In gathering Peaches, Nectarines, and Apricots, the fruit should be held in the palm of the hand and given a gentle twist, when it will become detached. The usual practice is to pull them off; this often injures the wood and the fruit also. These fruit, when thus gathered and kept for a few days, require to be examined every day as to their state of keeping. *Plums* also keep very well if treated in a similar manner, but should be gathered only when *nearly* ripe, or they will not ripen off so well. This fruit does not bruise so easily; but if care is not taken, the beautiful bloom upon the fruit is rubbed off and the appearance partially spoiled. Any of the aforementioned fruit-trees will need a little more attention to the thinning out of any superfluous shoots; these will chiefly be lateral growths, upon which no reliance can be placed for future bearing. Peaches and Nectarines in particular are predisposed to making such growths, but it is always best to remove them so that not only the wood for another season's bearing, but the fruit also, may receive the full benefit of the sun for perfect ripening. After the fruit is all gathered, all wall fruit-trees will be benefited by occasional syringing, to cleanse the foliage from insects and refreshen the trees also. No syringing should ever be done when the fruit is nearing the ripe stage, or cracking will be thereby induced. Should the weather perchance happen to be dry, as it sometimes is in September, it will assist the fruit-trees to give them a good watering, especially such as have produced a good crop in particularly light and gravelly soil. The hoe should be frequently used to keep down weeds amongst all fruit-trees and bushes; this stirring of the soil will still have a beneficial effect.

Kitchen Garden.—The Onion crop should be secured early in September; for this purpose advantage should be taken of the first fine day or two to pull all of the bulbs, and lay them closer together in rows, each sort separate. In a few days they will require turning over; after this has been repeated a few times they will have become well ripened, and fit for storing under cover when quite dry. A cool dry place will keep them in the best condition, whereas a damp atmosphere will cause them to start off at times into another growth. To economise room, it is a very good plan to string them together, when they may be hung up on a dry wall. The ground from which Onions have been taken makes an excellent plot upon which to plant the young Cabbages for spring cutting. It should be well prepared for the purpose by a good dressing of manure and deep digging; the ground will generally be found rather hard after an Onion crop; it will, therefore, require to be well broken to pieces. The Cabbage plants, if raised as previously advised, will now be of good strength and quite fit for planting. This should be done with a dibber, having previously set down a line as a guide, and then drawn a drill for the plants. One foot apart each way is none too thick to plant them at present; thus managed, each other row may be cut extra early, and the stumps destroyed. In the other rows, each other plant should be used as may be required to make up any blank places; thus the main crop will be left at two feet apart. This is better than planting at the latter distance at the commencement, and relying upon the seed-bed to supply any deficiencies as they arise.

Spinach seed should be sown early in September for standing through the winter and early spring picking. The ground for this sowing should be fairly firm, to prevent a too luxuriant growth. Lettuce should also be planted by the end of the month for standing through the winter; a sowing should also be made at the same time as the Spinach seed: this will stand in the seed-bed all the winter, and form the first succession for the following spring. Celery for early use should be earthed up as soon as it is strong enough; if done early in the month, it will be fit to dig by Michaelmas Day. It is not advisable to prepare more than one row for early use; this, when the Celery is of good size, may be begun and completed all at once; otherwise, it should be done with an interval of a week or ten days. All the rest of the crop should be treated in the latter fashion. Dry weather is the best for performing the work in a satisfactory way, as the soil handles so much better, for it is work that must be partly done with the hands. Some recommend the leaf-stalks to be tied around, to keep the heart free from dirt; this often causes the young growth to come up crooked.

The better plan is to hold them together with one hand, and work the soil between each in a firm manner. Before the earthing-up process is commenced, a good soaking with water should be given, and whilst the ground is still moist a thorough dusting with lime and soot should follow. This will keep the slugs and worms at a distance, otherwise they are liable to cause injury. Should the fly still cause trouble, more hand-picking will have to be done, and extra dustings of soot applied. Brussels Sprouts should be commenced upon as a change as soon as they are fit to pick; but as they will not yet be "turning in" in any quantity, care must be taken, or they will be wasted.

Autumn Cauliflower will now be in good condition; it is not advisable ever to let them get to excessive size before cutting, or when cooked they will be found to have lost the delicate flavour, and assumed that which may be termed "rather strong." Winter and early spring Broccoli often make too strong a growth at this season of the year; when such is the case, it is a good plan to give it a partial check by heading it over towards the north, when possible. This can be done easily by taking out a trench alongside of the outer row, and then turn the plants over by thrusting the spade down deeply on the other side, another vacancy being created by taking out another trench, and using the soil therefrom to cover over the stems of those first turned down. This is a good protection to the plants should a sharp winter ensue. Another Mushroom bed should be made up by the middle of the month, if the manure is at hand: this will serve as a succession to that previously recommended to be made. Parsley, which is always appreciated, should be gone over closely, and all the decaying as well as the oldest of the green leaves be picked off. This will encourage a younger growth, that will prove more useful later in the year. A narrow hoe should be worked carefully between the rows, and all weeds looked after closely at the same time. Where Potatoes are grown in the garden, the main crop should be dug up by the end of the month.

Tomatoes.—Towards the end of the month the state of the weather should be closely watched; sometimes a frost occurs after a period of wet, when injury is very liable to be done to the fruit. If such a change should threaten, all of the fully-grown fruits, even if not coloured at all, should be cut and placed in the dry, where they will ripen gradually and prove very useful. Those that are partially grown may be risked for a week or fortnight longer, and then cut when danger is apprehended. If any kind of material is at hand of a light nature, it might be hung in front of the plants at night, and injury from slight frosts averted. The later fruits will

ripen best in a little warmth, a shelf in the kitchen suiting them very well indeed.

Vegetables for Pickling.—These should be looked after early in September; a few days after a good rain is preferable to a dry time. None should be chosen that are getting too old; these will prove to be hard and less palatable. A medium age and size is better, when solidity can be had without toughness; such a sample will when pickled keep in better condition. Capers for pickling can be had by picking off the seed-pods of the Nasturtiums whilst still green, the plants being assisted at the same time.

The Vinery.—If treated as previously advised, the Grapes will be fully ripe this month, and possibly some may have been cut the last week or so in August. Those vines which are bearing the most bunches should be the first to be relieved of their burden, so as to equalise matters somewhat. The smaller and medium-sized bunches are generally the first to ripen; these too often assume the best colour, and for general uses are to be preferred to the larger ones. As soon as the fruit is fairly ripe, an abundance of air should be admitted from early morn until the dew begins to fall at night. Then the front ventilators (if any) should be closed, and the top nearly so, if security is afforded against the admission of rain; when this cannot be managed, it is better to close up and open again quite early in the morning, before any rise takes place in the temperature. But *very few*, if any, plants should be allowed in the vinery when the fruit is ripe, the object being to keep the atmosphere as dry as possible. Plants in vineries at such times should be watered in the morning, so that all may be fairly dry by nightfall. A close watch is needful to see that there are no decaying berries, one of which even, will, if overlooked, soon spoil those surrounding it, and eventually the bunch entirely. The slightest signs of decay in a berry should be arrested at once by its removal; and if any more are seen afterwards, the bunch had better be cut on the first occasion. In some localities wasps are troublesome to the ripe fruit; these may be prevented from entering the house by covering the ventilators with very thin material, such as that used for shading the roofs. Both rats and mice are troublesome at times, and when once they commence their depredations are a source of great annoyance until exterminated. If trapping does not succeed in this direction, we advise a mixture of barley-meal and plaster-of-paris to be made, with a little sugar added to it. This they will generally eat readily; and if provided with water to drink close at hand, they will soon succumb to the

effects of the plaster-of-paris. This mixture should be taken note of for all garden purposes; being non-poisonous, no danger need be feared for either cats or dogs, which is an advantage where these friends of the household are valued. Wherever the foliage of the vines is inclined to be rather thick, some of the lateral shoots should be removed, to admit more light and air, both of which are indispensable to the proper ripening of the wood, upon which the prospects of a future crop so much depends. If a few days of wet weather succeed each other, it will be rather difficult to dispel the dampness in the atmosphere. The safer plan then will be to light the fire and create some artificial warmth, which will assist in setting the air in motion and prevent any accumulation of moisture upon the foliage. Inside vine borders will not now need any watering; the soil will keep sufficiently moist for all requirements without it until the grapes have all been disposed of.

The Greenhouse.—The plants which during the summer months have been stood out of doors will require protection again by the middle of the month, excepting the Camellias and Cytisus, which will still be safe out of doors in fairly protected situations. This partial housing of the plants will cause an entire re-arrangement to be made for their accommodation, and no doubt the plants will have to be crowded rather more closely together than heretofore. It is not well to attempt to keep any plants that are sickly, with no probable prospect of restoration to health, especially if duplicates already exist. The

woodwork and glass should have a cleaning at such times, and all pots be washed, the drainage hole at the bottom of each being examined to see that it is not choked. The climbers that have ceased to flower, or partially so, should have some of the weakest wood thinned out, thus to admit more light, which new onwards will be of greater benefit to all the plants. Look carefully after any insect pests, and adopt means for each as previously advised; this will be more likely to occur upon plants that have remained in the house, rather than upon those which have possibly had good drenchings outside. For the better economisation of room, shelves near the glass are valuable; such positions suit many plants admirably, particularly those which will continue to grow, such, for instance, as the Pelargoniums and other soft-wooded subjects. When plants are first housed in the autumn, the house itself should never be quite closed for a few weeks, unless the temperature falls rather low or rough weather threatens. The Geraniums and other plants still in flower will continue to do good service until the first of the Chrysanthemums are opening their blossoms. The watering should now be seen to early in the day, and less also will be required; not that the plants should be allowed to suffer, but if over-watered now and onwards it will be a difficult matter to keep the roots in a healthy condition. Any plants that have an accumulation of mossy growth upon the surface of the soil should have it stirred up lightly and the worst portions removed, a little sand then being added, and all pressed down firm again.

DISEASES OF THE CHEST.

DISEASES of the chest constitute a very large proportion of the cases of serious illness met with in this country. The thorax contains not only the lungs, but the heart and large blood-vessels. It encloses organs which are essential to life, which are never at rest, and are exposed to influences liable to injure them. The slightest chill or cold may in delicate and susceptible individuals light up inflammation of the lungs; whilst the inhalation of air charged with dust or deleterious vapours may give rise to bronchitis and its attendant evils. Diseases of the lungs are especially apt to arise in the course of acute specific diseases, such as scarlet fever, measles, or small-pox, and constitute a very serious complication.

Some diseases, especially those of the heart, are merely functional; but others are organic, and rank high as causes of death. Some diseases of the

chest cause grave inconvenience, and incapacitate the sufferer from active exertion; whilst others, although of serious import, give rise to little or no disturbance of the general system, and are only detected by the physician after careful and systematic investigation. Some complaints, such as chronic bronchitis, do not materially shorten the duration of life; whilst others, such as disease of the aortic valves of the heart, often terminate it speedily, and with little or no warning. In times gone by, physicians relied almost entirely on the symptoms narrated by the patient; but nowadays the skilled observer trusts chiefly to his own powers of observation and to what is called a physical examination. The little wooden instrument known as the stethoscope affords information of the utmost value; and the physician who is skilled in such observations can tell by the sounds which are

conveyed to his ear what changes are taking place in the internal organs, with almost as much accuracy as if they were laid bare for his inspection. The mere existence of pain as a means of diagnosing the condition of the lungs or heart is of little value; for very acute pain may result from neuralgia of the chest-walls, or even rheumatism; whilst many of the most serious affections with which we are acquainted are absolutely free from pain of any kind.

Great strides have been made of late years in the treatment of nearly all affections of the lungs and heart. Consumption, for example, was at one time regarded almost as a hopeless disease; but since the introduction of cod-liver oil and extract of malt, and the more general use of arsenic, phosphorus, and the hypophosphites, together with the inhalation of antiseptic remedies, it is a much more curable complaint. Pleurisy, bronchitis, angina pectoris, and aneurism of the aorta, are all amenable to treatment; and if the patient can afford to obtain skilled advice and assistance, his chances of recovery are materially improved. Many diseases formerly considered hopeless, are now cured by surgical treatment—a simple operation affording prompt relief. For example, when fluid accumulates in the chest, we do not now wait days or weeks for its absorption, but remove it by a simple puncture, and the introduction of a metallic tube, or canula, in the interstices between the ribs. The use of such remedies as nitrite of amyl, nitro-glycerine, and nitrite of sodium has robbed angina pectoris of half its terrors, and the attacks are now controlled with almost absolute certainty. Much, of course, depends on the mode in which these powerful remedies are employed, and they are essentially unsuited for domestic use; but their power is unquestioned, and they have been the means of restoring many sufferers to a condition of comparative health.

With the spread of a knowledge of hygiene and a recognition of the importance of subsoil drainage, there is every reason to believe that consumption will become less common, and that in future generations it will no longer be regarded as the scourge of our country. Much, undoubtedly, depends on the action of corporate bodies, who are entrusted by the community with the care of this important work; but much may be done by personal effort in the direction of avoiding overcrowding, and ensuring thorough and proper ventilation of sleeping-rooms and dwellings. The necessity for obtaining proper rest and recreation is becoming more generally recognised, and the custom of taking an annual holiday is now almost universal. Cleanliness, too, both of the body and clothing, is an important

factor in warding off diseases of the chest; and with the spread of education, the mortality from all causes will assuredly decrease. In this and a succeeding article an attempt has been made to give an account of some of the most important of the complaints affecting the chest and the vital organs it contains.

Coughs.—A cough is a symptom of many diseases, and is a constant accompaniment of bronchitis, consumption, pleurisy, and a number of complaints. Sometimes the cough is a “throat-cough,” and is due to the presence of an elongated uvula or a relaxed condition of the muscles of the throat. There is also what is called a stomach cough, a cough which arises reflexly from the presence of some irritant in the stomach. People who from the nature of their occupations are compelled to inhale dust, or who are much exposed to damp or fog, nearly always have more or less cough, owing to the presence of catarrh of the throat and bronchial tubes. Many confirmed smokers—especially cigarette smokers—have a little huskiness of voice, which may or may not be accompanied by cough.

When the cough begins with a feeling of chilliness all over, the best remedy is camphor. The essence of camphor should be taken in drop doses on sugar every quarter of an hour, and it will often cause the disappearance of all the symptoms in a marvellously short time. If the patient is feverish, the camphor should be followed by aconite—one of the tabloid triturates of aconite, containing a minimum in each, being taken every quarter of an hour for the first hour, and subsequently hourly for five or six hours. When there is no fever, and when the cough is unattended with expectoration, relief may be obtained from the following cough linctus:—Solution of acetate of morphine and spirits of chloroform of each a drachm and a half, syrup of lemon peel two ounces, water to four ounces; a teaspoonful frequently when the cough is troublesome. Another good cough medicine, which has the advantage of not containing morphia or opium, is made as follows:—Syrup of tar two ounces, syrup of Virginian prune one ounce, water one ounce. The dose is one or two teaspoonfuls frequently. There are particular remedies which are indicated in certain special kinds of cough. For example, tincture of *drosera rotundifolia* is recommended when the cough is spasmodic in character and is followed by vomiting. It should be given in drop doses frequently repeated. Tincture of gelsemium is given when the cough is dry and irritating, in doses of from three to five drops in water every three hours. Nitric acid in small doses is useful when the cough

is of old standing, and there is much lassitude and weakness with loss of energy. The dilute nitric acid should be used, and the dose is five drops in water every three hours.

A cough is in many cases promptly relieved by an external application to the chest. Almost anything which reddens the skin will do, and a mustard leaf will give least trouble. Should the cough threaten to be obstinate, a good coating of iodine will prove most efficacious. The liniment should be selected, and should be painted on lightly by means of a brush over the whole of the chest and back. It will cause a good deal of smarting and irritation, but will not blister. If the iodine liniment is used properly, it will not require to be applied again for some days.

When the cough is due to a relaxed condition of the throat, cough linctuses and mixtures are obviously not likely to do much good. What is required is an application which will brace up the soft palate and adjacent parts. One of the best for this purpose is glycerine of tannin. It should be poured out in a saucer, and then swabbed with a brush all over the back of the throat. It has a powerful astringent taste, and is not very nice; but it does a great deal of good. Some people prefer lozenges or gargles. One of the best lozenges is the tannic acid lozenge, and another good one the red gum lozenge. A chlorate of potash gargle is useful; but, as a rule, it is not made strong enough. The best plan is to get an ounce of chlorate of potassium, put it in a bottle of cold water, and, after allowing it to stand for an hour, use it as a gargle. It is a saturated solution, and if more water is added from time to time, a constant supply will be obtained until all the chlorate of potash is dissolved. A still better plan is to get the chlorate of potash in the form of tablets, containing five grains in each. If sucked slowly, they act as a continuous gargle, and are very efficacious. Sometimes when the uvula is long, and keeps up constant cough and irritation, it will have to be removed or shortened. It is not a severe operation, and is practically unattended with danger.

A patient subject to coughs should take especial care to avoid catching cold, for a complaint which begins simply as a cough may, if neglected, prove the forerunner of bronchitis, or even consumption. Many a case of decline begins with what at the time is thought to be nothing more than a simple cough or cold. A person who has a weak chest should wear flannel or woollen underclothing next the skin all the year round, taking care that it is thick in winter and light in summer. Care will also be taken that the boots and socks are thick, and that they are changed if at all damp or wet. A cold bath in

the morning will stimulate the action of the skin, and prevent any undue pressure being thrown on the lungs. Constipation should be avoided, and there should be an evacuation every morning after breakfast. Exercise should be taken every day; if possible, more than once a day, and in the open air. An ample allowance of food is essential, and alcoholic drinks should be resorted to very sparingly. Smoking is not absolutely injurious when plenty of exercise is taken, but it should be limited to a couple of pipes or cigars daily. Night air is to be avoided, and a respirator will be found useful on cold nights. With these precautions, and the judicious employment of these remedies, the sufferer may fairly hope to avoid a repetition of his colds.

Colds.—We often speak of “catching cold;” but it must be admitted “a cold” is a somewhat comprehensive term, for it may mean a cold in the head, a cold on the chest, a cold in the joints, and, in fact, a cold in any part of the body. A cold, however, is not to be despised, for it is the starting-point of bronchitis, inflammation of the lungs, quinsy, pleurisy, rheumatism, neuralgia, toothache, and a host of other very disagreeable, not to say dangerous complaints. The causes of cold are various. A cold, using the term in its generic and widest sense, may arise from insufficient clothing, from getting wet through and neglecting to change the things, from wearing thin boots, from sitting in a draught when heated, and from a number of similar causes. One of the most prolific sources of cold is living in a damp house, especially if built on clay soil. Another cause is sleeping in a damp bed, or if not actually in a damp bed, in sheets which have been imperfectly aired. Prolonged bathing often gives rise to cold, and the prevalence of east winds has much to answer for. A general state of debility predisposes to catching cold; and a person in robust health, even if not very careful, rarely suffers in this way. Excessive indulgence in alcoholic drinks, by lowering the tone of the system, predisposes not only to colds, but to almost every disease and affection.

A cold in the head is generally spoken of as a “coryza,” whilst when it attacks the chest it is called “catarrh,” although the patient may suffer from both forms concurrently. There is generally a little feeling of chilliness, or perhaps a slight shivering, to begin with, and then the patient feels that his nose is blocked up, and that he cannot breathe through it as readily as usual. He sneezes a good deal, and there may be a running from the nose and eyes, the fluid secreted being of an acrid and irritating nature. As the cold extends downwards, it attacks first the throat and then the mucous

membrane of the bronchial tubes. The throat feels sore, the voice is husky, and there may even be pain and difficulty in swallowing. This is followed in a few days by pain in the chest, a dry husky cough, or perhaps a cough attended with expectoration. The temperature is elevated (perhaps two or three degrees), the pulse is quick and hard, there is loss of appetite and a general feeling of unrest, and then the joints begin to ache. The patient is evidently in for a "regular cold all over," and the sooner he takes steps to arrest its progress the better.

A cold is easily checked if taken in time, but, if neglected, it may assume a serious form. Taking cold, as has been very truly said, is the cause of half our diseases. The patient should order a fire in his bedroom, have the sheets well warmed, take a hot bath, and go to bed early. He should have a basin of gruel or arrowroot, with a teaspoonful of brandy in it; or, if this is not procurable, a stiff glass of gin-and-water. He should also take ten grains of Dover's Powder made into a couple of pills. This will make the skin act; and if he gets into a good perspiration, and has a sound sleep, he will probably wake up in the morning all the better for it. Should this not have the desired effect—and it must be remembered that it is only in slight cases that it will effect a cure—he must make up his mind to stay indoors for a day or two. He should have a good fire, with a bronchitis kettle (Vol. I., p. 201) steaming on the hob, and should be satisfied with no greater mental exertion than is involved in reading a novel. His dietary should be of the lightest description, his food consisting chiefly of beef-tea, varied with milk and soda-water and arrowroot. Demulcent drinks, such as linseed-tea, should be taken freely; and the patient should make himself as comfortable as he can under the circumstances. With regard to medicinal treatment, the best remedy to begin with—and it is especially useful during the initial chill—is the saturated solution of camphor in spirit commonly sold as "essence of camphor." Of this three drops should be taken in milk every hour; and, in addition, it may be used to inhale like smelling salts. After the first few hours tincture of aconite is the best remedy, especially when there is fever, and the skin is hot and dry. The tabloid triturates of aconite contain one drop in each, and one should be taken every quarter of an hour to begin with, and then once an hour for five or six hours. They will bring down the temperature, lower the pulse, and moisten the skin, giving relief at the same time to the oppressive feeling in the chest. When the cold is chiefly in the head, strong smelling salts containing ammonia will be found useful; or the patient may use an inhalation made by adding ten drops of tincture of iodine to a pint of hot—not boiling—water.

When the cold in the head is cured, but the chest symptoms persist, a mustard poultice or mustard leaf will be found useful, and a five-grain tabloid of chlorido of ammonium every three or four hours will be a help. When the cold is chiefly in the throat, tabloids of chlorate of potassium are better, and these should be sucked incessantly the greater part of the day. For pains in the limbs, a tabloid of salicylate of soda should be swallowed with water every two hours for a couple of days. The pains often persist longer than the other symptoms; but they may be relieved by rubbing, and the use of hot baths containing sea-salt in solution. A Turkish bath is very useful in this condition, but care must be taken not to catch cold after it. The best Turkish bath under the circumstances is one which can be taken in the bedroom, the necessary apparatus costing only a few shillings.

People who are subject to colds should take steps to prevent their recurrence. They should wear under-clothing composed wholly of wool, and this should extend even to the socks. They should live well, and avoid alcoholic drinks. They should take a daily bath—cold in summer, tepid in winter—and should keep the skin healthy by rubbing it well with a rough towel. Exercise is essential, and half an hour with the dumb-bells twice a day will be found most beneficial. Later on a bicycle ride, or a turn with the single-sticks, will do much to promote the circulation. The bed-clothing should be warm, and the bed-room should be thoroughly well ventilated by leaving the window open summer and winter for a couple of inches at the top. Hot, ill-ventilated rooms and crowded assemblies should be avoided. Many people pin their faith to wraps and respirators; but although they may be occasionally useful, as in coming out of a church or theatre, it is best not to trust them too much. The boots should be thick and roomy, and should be ventilated by one or two large apertures at the back of the heel. If possible, the patient should live in a bracing atmosphere, and his working or sitting-room should face the south, so that he may get the maximum of light and sun. A damp foggy atmosphere is always injurious, and a clay soil should be avoided. If these precautions are taken, the patient will soon find that he has cured himself of his susceptibility, not only to cold, but to rheumatism, neuralgia, bronchitis, and a number of other affections. He will materially increase the duration of his life, and double his working powers.

Bronchitis.—There are two forms of bronchitis, the acute and the chronic. The acute form, although of shorter duration, is the more serious, and imperatively demands the care and attendance of a medical man. The symptoms of an acute attack vary

according to its severity, and the conditions by which it is caused or which complicate it. It may perhaps appear trifling at first and be mistaken for an ordinary catarrh. In a day or two, however, there is considerable increase in the amount of cough, the expectoration becomes more abundant, breathing is difficult, there is pain and tenderness over the breast-bone, accompanied perhaps by sore throat. At the same time there is fever, the temperature running up at night to 103° Fahr., or even higher. This condition is serious, and calls for prompt treatment. Pending the arrival of the doctor, the patient should be put to bed in a warm, well-ventilated room, in which there is a fire with a bronchitis kettle. A large mustard and linseed meal poultice should be applied over the whole back and the front of the chest. It should be followed by a hot linseed meal poultice, to be renewed every three hours. A draught should be prepared containing thirty drops of sweet spirits of nitre, a drachm and a half of solution of acetate of ammonia, fifteen drops of ipecacuanha wine, twenty drops of compound tincture of camphor, and a tablespoonful of water. This should be given at once, and should be repeated four times a day. The diet should be light, consisting of gruel, arrowroot, milk and soda-water, and beef-tea or beef-essence. As the patient improves, fish, chicken, panada, oysters, sweet-bread, and other nourishing forms of food may be added. Alcohol will be required, and it is usually found that whisky and soda-water is taken as well as anything. Cooling drinks may be given without stint, and the patient may have linseed tea, lemonade, orgeat, or any fluid possessing demulcent properties.

Chronic bronchitis is a very prevalent complaint all over the British Isles, and is especially common in large towns. It is popularly known as "winter cough," from the fact that the symptoms make their appearance at the beginning of the winter and last until the summer comes again. It may occur at any age, but the chief sufferers are middle-aged people, who from the nature of their occupations have been a good deal exposed to the inclemency of the weather. Dust is another common cause, and few things predispose to bronchitic attack more than fog. The symptoms are unmistakable. In the first place, there is a bad cough, which comes on in violent paroxysms, shaking the patient and causing him the greatest distress. The cough is bad more or less all day, but it attains the maximum of severity the first thing in the morning. It is excited by exertion, by a current of cold air, by moving from one room to another, and by a thousand and one things; so that the patient is very helpless. It is always accompanied by expectoration—frothy to begin with, but soon

becoming thick and yellow. The quantity expectorated is large, and is often expelled with difficulty. Shortness of breath is always one of the greatest trials, the patient being unable to walk even a hundred yards without feeling distressed. There is not, as a rule, loss of flesh, although the patient may possibly get a little thinner during the winter months. There is no alteration of temperature, the appetite remains fairly good, and there is no complaint of anything but the distressing cough and shortness of breath.

The treatment of this condition varies according to the severity of the symptoms. The patient, as a rule, is not confined to bed unless there is an acute exacerbation, but he will be glad to keep his room, especially on foggy days. When he is obliged to go about, he walks as little as possible, and is glad to seek the friendly shelter of the house. The remedies to which he may resort are various, and many of them afford great relief. One of the best is chloride of ammonium or sal-ammoniac. A mixture may be made containing ten grains of the chloride of ammonium, five grains of carbonate of ammonium, ten minims of chloric ether, and half a drachm of liquid extract of liquorice in an ounce of water, and this should be taken every four hours. Another and more convenient mode of taking this drug is in the form of the chloride of ammonium tablets, each containing five grains, two of which should be taken frequently. The chloride of ammonium acts as an expectorant and loosens the phlegm.

An excellent remedy is common wood-tar, known technically as "*pix liquida*." Tar pills and tar capsules may be obtained at any chemist's. The capsules are not of uniform shape or size, but contain about two grains in each, and two or three should be taken every three hours. The pills—even if they contain only two grains—are somewhat bulky, and not very convenient to take. A much nicer preparation is syrup of tar, which can be readily made at home, according to the formula given in the United States Pharmacopœia, which directs that to make two pints of the syrup you must take three ounces of tar, five ounces of cold water, a pint of boiling distilled water, and twenty-eight ounces of sugar in coarse powder. "Upon the tar contained in a suitable vessel pour the cold water, and stir the mixture frequently during twenty-four hours; then pour off the water, and throw it away. Pour the boiling distilled water upon the residue, stir the mixture briskly for fifteen minutes, and set it aside for thirty-six hours, stirring occasionally. Decant the solution, and filter. Lastly, in seventeen fluid ounces of the filtered solution dissolve the sugar by agitation without heat." This is a very good

preparation, but it is not very strong, and a couple of tablespoonfuls may be taken every four hours. A stronger preparation can be made by acting on the tar with old rum, after being washed to remove any acid, as in the case of the syrup. The rum should be allowed to take up as much as it will dissolve, and the dose will be two teaspoonfuls.

Another good remedy is pure terebene, a clear, pungent, aromatic fluid, the dose of which is ten drops on sugar every three hours. It eases the cough, promotes expectoration, and makes the breathing easier, especially at night. It may be used with confidence, and it is not uncommon to hear people say that it does them more good than anything. It may also be inhaled from a pocket-handkerchief or from the hand, and quickly allays spasm and shortness of breath. Care must be taken to get "pure terebene," and not the ordinary "terebene," which is only suited for disinfectant purposes. "Pinol" is another remedy which may be used in the same way; in fact, it is not a bad plan to mix the pinol and pure terebene in equal parts.

Inhalations of all kinds are useful. A very good inhalation is made by adding a teaspoonful of Friars' Balsam to a pint of hot water in a Martindale's Inhaler at a temperature of 135°. Ten drops of tincture of iodine in a pint of hot water, the steam being inhaled for ten minutes, will also facilitate expectoration. These inhalations should be taken, as a rule, after food, and the patient should not go out for a quarter of an hour. Reference has already been made to the value of chloride of ammonium when administered in the form of tabloids, but it is still more efficacious when the fumes are inhaled from a chloride of ammonium inhaler, a figure of which, with its method of use, was given on p. 121. It should be used for ten minutes or a quarter of an hour three times a day, and the fumes should be drawn well into the chest. Pure terebene or pinol may be dropped on absorbent cotton wool and introduced into the water in the large or wash bottle of the apparatus. This produces a powerful combination, and will be found to afford much relief.

When the throat is affected, tabloids of chlorate of potash or of chloride of ammonium and borax are useful. When the shortness of breath is the prominent symptom, stramonium cigarettes often give relief, whilst small pieces of nitre paper burnt in the room answer the same purpose. Burning Himrod's powder is not so efficacious as in spasmodic asthma, but even in chronic bronchitis it does good.

Stimulating applications to the chest are most useful. Poultices cannot be used for any length of time, and involve keeping the patient in bed, but liniments are always available. It is a good plan to rub bolla-

donna liniment into the chest from time to time; but it is hardly sufficiently irritating, and more benefit will be derived from iodine liniment. The iodine liniment is not to be rubbed in, but should be painted on with a brush. It causes a good deal of smarting, but the relief to the cough is very prompt, whilst the amount of expectoration is usually checked. The bowels should be kept open by means of some gentle laxative, such as the cascara sagrada tabloids, or the anti-constipation tabloid triturates, or by Friedrichshall or Carlsbad waters. The diet must be liberal, and usually stimulants will have to be taken at meals. Iron, quinine, phosphorus, coca, cod-liver oil, and extract of malt have to be resorted to from time to time. The patient will have to recognise the fact that there are some places in which he cannot live. A damp, foggy climate will very materially shorten his life. If his house is on clay soil, the sooner he gets out of it the better. He should live on a gravel soil, and the house should face south. Most of our chronic bronchitics leave London during the winter, and seek relief at one or other of the watering-places on the south coast. Even this is not always enough, and the patient will find that he longs for the climate of the Riviera, or even of Egypt. As already stated, he must be fed up as much as possible, and he should take exercise whenever opportunity offers. The exertion of walking is often too great, but half an hour on an easy tricycle will be found just what is required. Night air should be avoided, and little faith should be placed in respirators.

Pleurisy.—By pleurisy is understood inflammation of the pleura or membrane covering the lung. It may be "dry pleurisy," or it may be attended with the accumulation of fluid in the chest. It ordinarily results from exposure to cold, but in exceptional cases it may be due to a blow or fall on the walls of the chest. It may be secondary to some constitutional disturbance, such as Bright's Disease, and it not uncommonly follows in the wake of specific disorders or fevers, such as measles or scarlet fever. It is not an uncommon complication of inflammation of the lungs, and then usually assumes a severe character.

The onset of pleurisy is marked by sharp stabbing pains in the side, or in the neighbourhood of the breast. From the very commencement there are rigors, or a feeling of shivering. The temperature quickly rises, and in a few hours the thermometer may mark 103° or more. The pulse is quick, often so quick that it can only be counted with difficulty. The breathing is hurried, the inspirations in particular being short, jerking, and interrupted. Disturbances of the digestive organs.

constipation, and headache, are common accompaniments. Cough is another symptom, but it is rarely paroxysmal, and is often small and half suppressed in consequence of the severe pain with which the effort is attended. Expectoration is common when bronchitis is an accompaniment, but often the cough is quite dry. The presence of rust-coloured expectoration may be taken as an indication that the lungs themselves are involved, and that the patient is also suffering from pneumonia. When the doctor listens with his stethoscope, he hears a peculiar rubbing sound, which is a sure indication that the surface of the pleura is inflamed and roughened. At a later stage there is effusion, and the chest becomes filled with fluid. This fluid may be perfectly clear and watery, or it may become thick, and take on the characters of matter. The physician detects the presence of fluid by an examination which is easy enough to him, although it would be found extremely difficult for those not accustomed to such investigations.

Pleurisy is a disease which is very liable to be confounded with other diseases of the chest. It may be mistaken for inflammation of the lungs, or the converse error may be made. It is of the utmost importance to ascertain whether there is consumption in addition to pleurisy, and a positive opinion on this point can be given only after a careful examination, or it may be after many examinations. It is not always so easy as may be imagined to distinguish between dry pleurisy and neuralgia, or rheumatism of the chest-walls. The same symptoms are common to both conditions, and the aid of the thermometer is usually essential in making a differential diagnosis.

Cases of pleurisy without effusion commonly terminate favourably; but when effusion sets in, and fluid is poured out into the chest, obstructing the free play of the lungs, the condition is much more critical, and the patient's life is placed in imminent danger. It may be taken as a rule that secondary pleurisy—that is, pleurisy which follows in the wake of some other disease—is always more dangerous than pleurisy which results from exposure to cold. Double pleurisy, when both sides of the chest are distended with fluid, is always fraught with danger.

In the treatment of dry pleurisy various applications may be made to the chest with advantage. A strong mustard poultice or a mustard leaf will often relieve the pain—temporarily, at all events. A blister about the size of a florin is another popular remedy; and, if necessary, a succession of blisters may be applied. Painting the chest with tincture of iodine is very useful, and often affords prompt relief. When other methods of treatment fail, strapping the chest

with strips of plaster may be resorted to with advantage. When there is effusion of fluid, the patient will have to be kept in bed until it is all absorbed. In these cases, as already indicated, a surgical operation is often necessary. It is not of necessity a serious operation, but great care has to be taken to prevent the admission of air, or the fluid may be converted into pus, and such a complication always increases the gravity of the complaint. Convalescence is often prolonged, and it may be weeks or even months before the patient can get to work again. Change of air is usually an important factor in the restoration of health, and a sea-voyage is often necessary.

Pleurisy is at the best of times a serious complaint, and the greatest care is necessary in its management in order to bring it to a successful issue.

Inflammation of the Lungs.—This disease is known technically as pneumonia. The substance of the lung itself is affected, the inflammation not being confined to the mucous membrane of the bronchial tubes, as in bronchitis, or to the covering of the lung, as in pleurisy. Pneumonia is allied in general symptoms to some of the acute fevers, its onset being sudden, the temperature being high, and the constitutional disturbance great. The patient is seriously ill, and is glad to take to his bed. Sometimes only one lung is attacked, at others both are involved, the patient being said to suffer from double pneumonia. Not uncommonly the inflammation extends from the lung substance to the covering of the lung or pleura, and the patient is said to have "pneumonia and pleurisy," or "pneumonia complicated with pleurisy." Pneumonia is most commonly met with in climates presenting marked and rapid variations in temperature, and it is especially prevalent in countries where the air contains a large percentage of moisture. It is a disease which attacks both the young and old, and it is common in young men, presumably in consequence of their greater liability to exposure to the exciting causes. The chief excitant of the inflammation is cold in some form or other, and it frequently results either from getting wet through and sitting in damp clothes, from lying down on damp grass to get cool, or other similar causes. It is a complication which frequently arises in the course of other complaints, such as measles, Bright's Disease, and many others.

The onset of pneumonia is frequently quite sudden, being ushered in by a rigor or shivering fit. The temperature will be found to be elevated, and it is not uncommon for the thermometer to mark a temperature of 103° or 104° within a few hours of the first feeling of illness. The pulse

is quick, and may beat 140 or even 160 in the minute. The skin is burning hot, the tongue is dry, there is great thirst, the appetite is completely lost, and there may be a little delirium or wandering at night. Pain in the side is not a constant symptom, but it is often very severe when the pneumonia is complicated with pleurisy. The cough, which is very distressing, is short and hacking, but does not come on in paroxysms. The expectoration is thick and viscid, and is often tawny or rust-coloured. The breathing is rapid, and the patient may experience considerable discomfort from shortness of breath, especially on attempting any little exertion, such as turning in bed.

The acute symptoms may last from five to ten days, and the temperature then suddenly subsides, leaving the patient extremely weak, but comparatively free from danger. The disease, however, does not always terminate so favourably, and death from exhaustion may occur at almost any time. Pneumonia is one of the most serious diseases with which we are acquainted, for it often carries off young men and women apparently in the best of health, and with very little warning.

It need hardly be said that a disease of this magnitude requires most careful treatment, and that it is absolutely necessary to obtain the best possible advice without delay. There is very little to do before the doctor comes. The sick-room may, however, be got ready for the reception of the patient. It should be a nice bright room, well lighted, airy, and not on the ground floor. All superfluous articles of furniture, such as the wardrobe, and large tables and easy-chairs, should be removed; and if the carpet is old and dirty, it should be taken up. The bed should not be a wide one, or difficulty will be experienced in moving and washing the patient; and everything in the shape of bed-curtains should be taken away. This is not because the disease is contagious, for it is not; but the patient requires plenty of air, and must have it, or he will die. A feather-bed is out of the question, and a good spring mattress should be obtained. The sooner these preparations are made, and the patient is put to bed, the better his chance of recovery. A small fire may be kept burning, except in the height of the summer, so as to ensure proper ventilation, and one of the windows should be left open at the top for about two inches. The temperature of the room will have to be kept at about 64°. The patient will require to be fed on slops, so that it will be just as well to arrange for a plentiful supply of milk, and to order some good strong beef-tea to be made. Brandy is another article which should be at hand. A good supply of linseed meal should be procured in

the event of poultices being required, and a bronchitis kettle will in all probability be found useful.

With regard to medicine, there is little to be said. The only treatment that will be found at all useful pending the arrival of the doctor, is the administration of small doses of aconite. Half a teaspoonful of tincture of aconite may be added to a large tumblerful of water, and of this a teaspoonful may be given every ten minutes for the first hour, and subsequently hourly for six hours. If the tabloids of aconite can be procured, they may be substituted with advantage.

Consumption.—Consumption or Phthisis is an affection of the lungs, or possibly of the whole system, accompanied by progressive debility and loss of flesh. It is often supposed to be peculiar to young people, but as a matter of fact it occurs at all ages. It is to some extent hereditary, but it is doubtful if family predisposition is a very important factor in its production. Probably the most potent cause of consumption is bad drainage, and especially the absence of subsoil drainage. This is a fact which has been known only during the last few years, and is yet hardly sufficiently recognised. Some years ago Dr. Buchanan was appointed by the Privy Council to investigate the effects on the public health of certain improvements in the sanitary conditions of a number of towns in England. He found that in fifteen large towns in which the alterations had led to a drying of the soil, the death-rates from consumption had fallen in the most marked manner, the improvement being in one case as much as 9 per cent. Mr. Simon in his report to the Privy Council says, "This is extremely interesting and significant when it is remembered that works of sewerage, by which the drying of the soil is effected, must always precede and do indeed precede by years, the accomplishment of other objects—house-drainage, abolition of cess-pools, and so forth—on which the cessation of various other diseases is dependent." Dr. Buchanan subsequently instituted a careful comparison of the geological formation of certain counties with their death-rate from consumption, and was able to show most conclusively that damp was one of the most patent causes of its production. His results were confirmed by investigations carried on independently by the Registrar-General of Scotland, and by the observations of Dr. Bowditch, of Boston, M.A., U.S.A., who instituted an investigation of the distribution of consumption in his own State. It has now been proved conclusively that a damp soil, or even a damp house, is one of the most potent causes in the production of consumption in the country.

Sedentary occupations undoubtedly favour the spread of the disease, but this is only putting the same

fact in another form, for those engaged in active outdoor exercises are naturally less exposed to the influence of any particular soil. Another cause of consumption is deficient ventilation—in other words, “re-breathed air.” When a person sleeps in a room without proper ventilation, he of necessity breathes his own expired and contaminated air over and over again; and if this is done habitually, it almost invariably results in consumption. It is absolutely unsafe to sleep in a room unless either the window is open, or there is some other channel for the introduction of fresh air.

The chief causes of consumption, then, are bad drainage and defective ventilation. Of late years it has been shown that a germ or bacillus is developed in the lungs and other parts of the body in connection with phthisis; but it must be remembered that no organism would develop there unless there were already a predisposition to disease, and the tissues were in a condition congenial to its formation. Stamp out the bacillus by all means, but at the same time take steps to improve the general condition of the patient, so that its hold is rendered untenable. Consumption is not popularly regarded as a contagious disease, but a recent writer has collected over a hundred cases of infection, due for the most part to attendance on a husband or wife suffering from the complaint. “In the rare instances of contagion through inhalation the condition appears to have been (1) close intimacy with the patient, such as sleeping in the same bed or room; (2) activity of the tubercular process either in the way of tuberculosis or of excavation; (3) neglect of proper ventilation of the room. The moral is, that consumptive people should not be allowed to sleep in the same room with the healthy, and that the supply of fresh air should be ample, so as to carry off the products of the disease.” Consumptive patients should not be congregated together in large numbers, but should as far as possible be isolated. A common source of infection is drinking cows’ milk obtained from tubercular animals.

The general symptoms of consumption are cough, accompanied by expectoration, spitting of blood, shortness of breath, night-sweating, and wasting. It does not follow that all these occur at the same time, but some of them will attract attention. The cough is usually slight to begin with; but as the disease progresses, it gets more and more severe, until it gives the patient little or no rest night or day. The expectoration is at first simply frothy; but as the cough increases, it becomes thick and yellow. The amount of bleeding from the lungs varies much. Sometimes there is never more than a few teaspoonfuls, or perhaps even a few streaks, whilst in other cases it may amount to pints. Night-sweating is

often very profuse, and, unless checked, rapidly exhausts the patient. The loss of flesh, if the disease is allowed to run its course, is progressive, the patient often losing a couple of pounds or more in the week. Shortness of breath is not usually a prominent symptom—at all events, until there is considerable loss of the substance of the lungs. Diarrhoea often results from indiscretion in diet, and pains in the chest, due to some little localised pleurisy, are not uncommon. When a person suffers from any of these symptoms, he should at once obtain skilled medical advice.

Consumption is a serious disease, but if taken in time there is no reason why it should not be cured. It is, of course, to some extent a matter of means. If the patient can get right away, he will in all probability be cured; but if he is tied down to one place, and has to live in a damp unhealthy situation, his chances of recovery are very materially diminished. Much, however, may be done in the way of medicinal treatment. Cod-liver oil is the standard remedy, and in one hospital alone it is said that more than 1,500 gallons are dispensed annually. There are many different kinds of cod-liver oil, but the pale is better and purer than the dark brown oil. The quality of the cod-liver oil sold in England has improved greatly of late years, and much care is now taken in its preparation and selection. Some specimens are nearly tasteless and odourless. Cod-liver oil should always be taken immediately after meals, and the dose should not exceed a tablespoonful. There are many ways of taking the oil. Some people like it best by itself, while others take it in a little brandy-and-water, or with a pinch of salt, or an acid drop. A good plan is to float it on a draught containing fifteen grains of bicarbonate of soda, fifteen minims of spirits of chloroform, and an ounce of compound infusion of gentian. An excellent combination is the Kepler Extract of Malt with cod-liver oil, taking a tablespoonful three times a day after meals. Some people have an invincible repugnance to cod-liver oil in any form, and then the plain Kepler Extract of Malt should be given by itself.

Certain drugs are considered to exert a special influence in arresting the progress of the disease, the chief being arsenic and hypophosphite of lime. The hypophosphite of lime should be given in the form of Fellows’ Syrup of Hypophosphites, a teaspoonful being taken twice or three times a day between meals. The dose of arsenic—or arsenious acid, as it is more correctly called—is a thirty-second of a grain, administered in the form of a pill immediately after meals. A great deal of good may be done by painting the chest from time to time with liniment of iodine. It is a strong preparation, and care must be taken not to put it on too thickly, or it will produce a

blister. The cough, if excessive, may be checked by a linctus containing three drops of acetate of morphine, three drops of spirits of chloroform, and twenty drops of syrup of lemons, made up with water to a teaspoonful. This should be taken frequently both day and night. The expectoration and shortness of breath may be relieved by inhaling for ten minutes or a quarter of an hour a mixture of equal parts of pure terebene and pinol. The night-sweating may be checked by taking at bed-time one tabloid triturate of atropine, containing one-hundredth of a grain. Another very valuable remedy is a pill containing one-sixtieth of a grain of picrotoxine, taken on retiring to rest,

he used for this purpose, but the most popular are pure terebene and pinol, taken either separately or mixed. From five to ten drops should be used to begin with, and the application should be renewed every three or four hours. The patient should wear the inhaler from twelve to sixteen hours a day—taking it off, in fact, only at meal-times, or when in the open air. Or a good plan is to sleep in it, and then it can be discarded the greater part of the day. The pure terebene at first often gives rise to a little giddiness, but this passes off in a few days. In a week or two the cough and expectoration are lessened; and if the patient can only manage to keep on using the inhaler for six or eight months, there will be great



Fig. 1.—HUNTER-MACKENZIE INHALER.

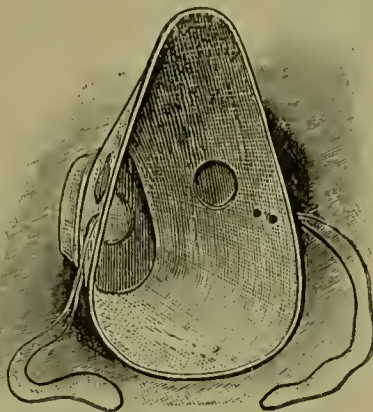


Fig. 2.—SINCLAIR-COGHILL INHALER.

and repeated during the night if necessary. The bleeding, if slight, is of no importance; but should it continue, ice must be sucked continuously, and a few drops of oil of turpentine may be inhaled from a piece of lint or a handkerchief. Diarrhoea may be checked by lime-water and milk in equal parts, half a tumblerful being taken three or four times a day; or by ten grains of compound kino powder.

One of the best methods of treating consumption is by what is known as the antiseptic treatment. The measures already indicated are designed chiefly to improve the general state of nutrition; but if the patient is to be cured, something must be done to destroy the bacillus which has invaded the lungs. The only effectual way of doing this is by inhalations, and the substance to be inhaled must clearly be antiseptic. As the inhalation has to be used for many hours at a time, some kind of portable inhaler is needed. Several have been designed, the best-known being the Hunter-Mackenzie, which covers both the nose and mouth (Fig. 1), and the Sinclair-Coghill (Fig. 2), which covers the mouth only. The inhaler is furnished with a piece of sponge or lint, on which the antiseptic substance can be dropped.

Many drugs possessing antiseptic properties can

be used for this purpose, but the most popular are pure terebene and pinol, taken either separately or mixed. From five to ten drops should be used to begin with, and the application should be renewed every three or four hours. The patient should wear the inhaler from twelve to sixteen hours a day—taking it off, in fact, only at meal-times, or when in the open air. Or a good plan is to sleep in it, and then it can be discarded the greater part of the day. The pure terebene at first often gives rise to a little giddiness, but this passes off in a few days. In a week or two the cough and expectoration are lessened; and if the patient can only manage to keep on using the inhaler for six or eight months, there will be great

hope of destroying the bacillus entirely. Sometimes, for a change, the pinol or pure terebene may be mixed with oil of lemons, or some other volatile essential oil. This mode of treatment has been known only a few years, but has proved remarkably successful.

The dietary of a patient who is consumptive, or who has a tendency to consumption, must be carefully regulated. Plenty of food must be taken, and the fatty elements should preponderate. Milk is most valuable, and several pints may be taken with advantage in the course of the day. It is a good plan to mix it with one-third of soda-water or lime-water, as it makes it easier of digestion. Eggs are nutritious, and may be prepared in various ways. Fat bacon for breakfast should be taken from time to time, and vegetables, such as haricot beans, French beans, and lentils, which soak up a good deal of butter, will be found a useful adjunct at dinner-time. Ass's milk may be taken for a change from time to time, and goat's milk is relished by some people. Koumiss, the fermented milk of unworked mares, is a very valuable remedy. The real koumiss is not easily obtained in London, but an artificial koumiss, made from cow's milk, is sold.

Plenty of meat in a readily digestible form is essential. To take plenty of food a patient must take plenty of exercise. The best form of exercise for a consumptive is one which develops the muscles of the chest, and admits air into the lungs. Dumb-bells and Indian-clubs are useful, but swinging by the arms on a horizontal bar, or trapeze, suspended by ropes from the ceiling, is even better. It has been said that riding is as much a specific for consumption as bark is for the ague; and although this may not be literally true, it serves to point to the value of equestrian exercise in this complaint. A bicycle is even better than a horse; and if the patient is strong enough to take long rides in the open air, he is in a fair way to recovery. When a patient is too weak to ride a bicycle or tricycle himself, he may take exercise in the "Coventry Chair" made by Stanley and Sutton, of Coventry. It is perfectly safe, and with a passenger weighing twelve stone thirty-five miles have been accomplished in four hours and ten minutes, and ninety-five miles in a single day. It demands, of course, a powerful cyclist to propel it, but the quick motion is better than that of an ordinary carriage, and more exhilarating, while quite as easy.

It must be remembered, however, that these are but palliative measures; and that if the disease is at all advanced, the patient will have to seek restoration to health in a better climate. The chief health resorts for consumptives in this country are Ventnor, Bournemouth, Sidmouth, Torquay, Hastings, St. Leonard's, Penzance, and Worthing. Abroad there are Mentone, Nice, Cannes, San Remo, and the high Alpine districts, such as Davos, St. Moritz, or Grindelwald. Many patients now go to Colorado, whilst others resort to the Californian stations, such as Los Angeles, San Diego, and San José. Probably nothing does so much good as a sea trip, and of the various sea voyages the best is that to Australia or New Zealand round the Cape of Good Hope. It is better for many reasons to go in a sailing vessel, and to leave England either in October or November. On arriving there, two months should be spent on the hills, and the return trip should be made by the Cape of Good Hope, and not by Cape Horn. Another good water trip is by the Royal Mail Steam Packet Company's steamers to the West Indies; or if something shorter will suffice, the Donald Currie or Union companies' steamers to the Cape of Good Hope are excellent.

The Koumiss treatment for consumption, carried on in certain places in Russia, especially Samara and Orenburg, has afforded results in the way of recovery which are little less than marvellous. The great difficulty is the distance from London and the expense of the journey. In summer the

patient as a general rule takes the boat from Hull or Leith to Petersburg, the journey occupying six or seven days, and the fare being about five pounds. From Petersburg he goes by rail to Bologoro, which is about half-way to Moscow; and from thence to Ribinski, on the Volga—this part of the journey occupying eighteen hours, and costing about two pounds first-class. From Ribinski he goes down the Volga in forty-five hours to Nijni Novgorod, and then by another boat in forty-three hours to Samara. From Samara to Orenburg is fifteen hours by rail. The whole route is distinctly mapped out in Bradshaw's Continental Railway Guide, and an invalid travelling leisurely would probably occupy thirteen or fourteen days in getting from Great Britain to the heart of the Steppes. By travelling by rail from Petersburg to Moscow, and then to Nijni Novgorod, a saving of twenty-nine hours may be effected. In winter the journey from London to Petersburg would be performed *via* Calais and Berlin in sixty-eight hours, the fare being about thirteen pounds, so that Orenburg might be reached in six or seven days. Full particulars of the treatment are given in "Koumiss, or Fermented Mare's Milk, and its Uses in the Treatment and Cure of Pulmonary Consumption," by Dr. George L. Carrick, an English physician practising in Petersburg. The work, which is in English, is published by Blackwood and Sons of Edinburgh.

The chances of recovery from consumption are very much better than they were even ten years ago. A recent writer says: "The outlook of the future of consumption is decidedly hopeful, for there is little doubt that much of the disease is due to preventible causes, which the coming reign of hygiene will sweep away, and that in many cases the disease will be nipped in the bud by a combination of anti-phthisical and bacillicide treatment; while in more advanced cases life will be prolonged even beyond its present lengthened duration." At the recent Medical Congress at Berlin in 1890 Dr. Koch announced that he had reason to believe he had discovered almost certain means of destroying the bacillus in the body.

It is now a pretty generally accepted fact that consumption is directly communicated from one person to another. The germ of the disease exists in the expectoration of the individual afflicted with it. It is commonly produced in the lungs—the organs most frequently affected—by breathing air in which living germs are suspended as dust. The substance coughed up, often in large quantities, by persons suffering from consumption, contains these germs in enormous numbers. This material when expectorated frequently lodges in places where it quickly dries; as, for example, the pavement of our streets,

floors, carpets, doormats, pocket-handkerchiefs, &c. When dry, it becomes pulverised and floats in the air, in the form of a very fine and highly contagious dust. The New York City Board of Health has recently had the subject under consideration, and, recognising the gravity of the danger, has issued a code of regulations or recommendations, of which the following is an abstract:—

1. Do not permit persons suffering from consumption, even in the early stage, to spit on the floor or carpet. The expectoration should be received in spittoons containing a solution of corrosive sublimate, one part to a thousand of water.
2. Do not sleep in the same room as a person suspected to be suffering from consumption. The living-rooms of a person tainted with the disease should have as little furniture as possible, whilst hangings, curtains, carpets, mats, and rugs should be abolished.
3. Do not fail to wash thoroughly glasses and eating utensils used by the patient, using boiling water or water containing Condy's Fluid for the purpose.
4. Do not send the washing of the consumptive to be washed with the clothes of other members of the family.
5. Do not neglect to mix the stools of the patient with a one-in-a-thousand solution of corrosive sublimate before discharging the excreta into the drains.
6. Do not permit mothers suspected of having consumption to suckle their children.
7. Do not fail to clean the floors, walls, and ceilings of both the living and sleeping rooms of the consumptive with some disinfectant at least once a fortnight. When dusting the rooms, have the windows and doors wide open, so that there may be a thorough draught of fresh air. Moisten the dusters used for dusting with the corrosive sublimate solution, and see that they are washed in boiling water as speedily as practicable.
8. Do not neglect to have the pocket-handkerchiefs used by the patient thoroughly boiled before being again used, or, better still, provide him with pieces of soft rag, which can be burnt when they have served their purpose.
9. Do not encourage the patient to keep pets in his room, as dogs, cats, and birds, soon acquire the disease, and may communicate it to other people.
10. Do not unnecessarily inhale the breath of consumptive people, and do not hesitate to warn members of the family of the risk they incur by so doing.

Asthma.—Asthma is a very prevalent and a very distressing complaint. It lasts a lifetime, and practically the patient is never free from it. There are times when he feels perfectly well, but he can never make any engagement with any certainty, for he knows only too well that any hurry or worry, or even a little excitement, will inevitably induce an attack, and render him incapable of the slightest exertion. Asthma, especially when it comes on for the first time late in life, is often secondary to some other complaint, such as disease of the heart or aneurism, but the great majority of cases of asthma are asthma pure and simple. How it originates it is difficult to say. It may be hereditary, but why it should attack particular members of a family and leave others unaffected we do not know. Sometimes it follows some one or other of the diseases of childhood—*whooping-cough*, for example; but quite as commonly it comes on slowly, and year by year gets worse and worse. It is a neurotic or nervous disease undoubtedly, but some varieties assume the “*peptic*” form, the paroxysms being induced by certain articles

of diet, such as cheese or nuts. Asthma is a serious complaint; not because it shortens a man's life to any extent, but because it makes life a burden to him, and hinders him in his everyday work, and prevents him from earning a livelihood.

The attacks usually come on at night, but there is no rule, and the sufferer may be seized at any time. When the attack is at its height, he is a pitiable object, for he cannot speak and cannot lie down, but stands holding on to something and gasping for breath. At times the nails and lips are blue, and the skin is covered with cold, clammy sweat. He feels stifled, and often sits at the open window in the scantiest attire, even on the coldest night. This may go on hour after hour, until he is utterly exhausted and ready to sink with fatigue. When the spasm abates, he falls into a fitful uneasy slumber, in which for a time his troubles are forgotten. After a very bad attack there is usually a period of comparative immunity, which the patient should utilise for making engagements and seeing to matters which urgently demand attention.

The remedies for asthma are many, but unfortunately there is no absolute cure. There is probably no complaint which is so rebellious to treatment, and the most curious thing is that a remedy which will answer admirably for one patient may prove utterly useless in the case of another. Every sufferer has his own pet remedy, and knows by experience how to use it. Tobacco is one of the best and most popular for non-smokers; but nowadays almost every one smokes to such an extent that tolerance has been established, and the drug fails to exert its depressing action. Many men obtain no relief from an ordinary Havana cigar, but breathe quite easily a few minutes after smoking a pipe of shag or cut cavendish, especially if the pipe is old and dirty. In the case of ladies and young people a Turkish cigarette will often answer admirably; and when that fails, the American “*Straight Cut*” cigarettes, which are somewhat stronger, may be resorted to with advantage. In people who have never smoked before, a certain amount of nausea and depression may be induced; but this is all the better, for as soon as the patient begins to feel uncomfortable the spasm gives way, and relief is obtained. There is one difficulty about the smoking, which is that sometimes when the attack is at its height the patient is so short of breath that he cannot draw the pipe. When that is the case, some one must smoke for him, and puff the smoke into a jar, so that it may be inhaled cold.

Many asthmatics smoke stramonium leaves in preference to tobacco. This is an indigenous plant, which grows readily and plentifully out of doors, often enough in some waste place where nothing else will

grow. Its botanical name is *Datura Stramonium*, and it is often called the Devil's apple or Jamestown weed. The leaves are used, and if carefully dried and cut up make very good tobacco for asthmatics. Some people smoke it in a pipe, others in cigarettes, whilst it is often made into cigars. It should be taken right down into the lungs, and retained as long as possible. If it is desired to make it more active, the seed may be used as well. Some people prefer mixing it with a little mild tobacco, but this is not a good plan, as it makes it more difficult to inhale. There is a special kind of stramonium sold by chemists, under the name of *Datura tatula*, but it is doubtful whether it is a distinct species or simply *Datura Stramonium* grown under exceptionally favourable circumstances as regards soil. The whole of the plant is used, and it is commonly sold mixed with aromatic substances, and probably a little camphor. It, like the ordinary stramonium, may be smoked either in a pipe or as a cigarette. A very good plan is to smoke a pipe of stramonium or tobacco in bed before retiring to rest, so that the fumes may permeate the air and ward off the attack.

Nitre papers are very useful, and rank only second to stramonium. They are made by steeping pieces of blotting paper in a hot saturated solution of common nitre. The blotting paper should be thick, and the white is better than the red, as it is made with finer rags. It is a good plan to add an equal quantity of chlorate of potassium to the nitre solution. The papers must be carefully dried—in the sun, if possible; if not, before a good fire. A piece about six inches square should be folded across the middle, so as to form a kind of tent, and it should be lighted near the top. It smoulders away, filling the room with dense white fumes, which not only allay spasm, but induce sleep. In obstinate cases it is a good plan to sprinkle the papers when dry with Friar's Balsam, or with a saturated solution of camphor in spirit. Ozone papers are made by the addition of a little iodide of potassium to the nitre solution. There are various powders which when burnt in the room are known to afford relief in cases of asthma, the most popular being "Himrod's Powder," "Bliss's Cure," and the "Green Mountain Cure." These powders have all pretty much the same composition, and consist of stramonium, lobelia, green tea, and nitre. A teaspoonful should be placed on a fire-shovel, or on the lid of the box and lighted with a match. As a rule they do not burn very readily, but by a little puffing and blowing they can be made to ignite and give off dense fumes. Many asthmatics use incense in the same way, and apparently derive much benefit from it.

Coffee is an excellent remedy for asthma, and it is no exaggeration to say that it gives more

or less relief in fully two-thirds of the cases. Sometimes the relief it affords is only slight and temporary, whilst in other cases it is complete and permanent. There are one or two points to note in connection with it. In the first place, it cannot be given too strong. Unless sufficiently strong to produce its full physiological action, it does harm rather than good. Then it should be given, if possible, on an empty stomach; and it should be taken very hot, and without sugar or milk. With these precautions it is an admirable remedy.

A Vereker Patent Chloride of Ammonium Inhaler (see page 121) is useful in the intervals between the attacks. It should be used for half an hour night and morning, the fumes being taken well into the lungs. A few drops of pinol, pure terebene, or oil of cubebs, should be dropped on a piece of absorbent cotton-wool, and introduced into the water of the wash-bottle. These substances not only allay spasm, but act as powerful expectorants, facilitating the expulsion of phlegm.

The vapour of ether or chloroform will often speedily cut short an asthmatic attack, but these are remedies which must be used with caution, and only under medical supervision. The patient should never be entrusted with a bottle of chloroform, as insensibility soon supervenes, and an overdose might be taken. The vapour of nitrite of amyl is also useful, but this, too, should be used only under competent advice. As a rule, remedies which are inhaled are more efficacious than those which are swallowed; but there are some drugs which, given internally, undoubtedly do good. One of the best is iodide of potassium, and the patient may take two five-grain tabloids three times a day immediately after meals. Some people are very susceptible to the action of iodine in any form, even the smallest quantity giving rise to symptoms of cold in the head. This idiosyncrasy cannot be guarded against, and the patient must be willing to put up with the temporary inconvenience. The popular remedy "Spirone," which is used as a spray or inhalation in cases of asthma and chronic bronchitis, is said to consist of a two-per-cent. solution of iodide of potassium in water, mixed with glycerine and acetone.

A Californian plant, called *Grindelia robusta*, has a great reputation in America for the cure of asthma, but it is difficult to obtain reliable preparations. The "Valoid of Grindelia Robusta" should be asked for, and of this a teaspoonful should be taken in water three times a day. It is a somewhat expensive remedy; a four-ounce bottle, containing thirty-two doses, costing half-a-crown. It is not poisonous; and even if it does no good, it can do no harm.

Every asthmatic should pay the greatest attention to diet. He will probably find by experience that

certain articles of food are more likely to induce an attack than others. It is impossible to lay down definite rules applicable to every case, and the sufferer must make a point of observing carefully for himself. It is not a good plan to make a heavy meal late in the day, and many an asthmatic has succeeded in warding off his attacks by the simple device of taking his dinner the first thing in the morning, and the meal which would correspond to breakfast some four or five hours before retiring to rest. The general condition of the health should as far as possible be maintained, and the patient should, when practicable, take exercise in the open air. Walking is, as a rule, out of the question, but riding is an excellent substitute; and when the sufferer cannot afford to keep a horse, he should purchase a bicycle or tricycle, which will give him exactly the exercise he requires without inducing fatigue.

It is at present almost impossible to *cure* asthma, and it is very little good attempting it; but by careful attention to these rules it is easy to mitigate its severity, and to make life bearable. Provided there is no complication, there is no reason why an asthmatic should not live to a green old age. Asthma is not a bar to marriage, and many a sufferer improves in health by entering on the matrimonial state. The regularity of hours and meals, which is usually an accompaniment of married life, is most beneficial, and the watchful care of a loving wife is a factor which is not to be forgotten.

Influenza.—Influenza is a disease which at different periods of its history has received many names. It was originally called “influenza” in Italy, where its appearance was attributed to the “influence” of the stars. It is known in France as “la grippe,” a term probably derived from the Polish. In Russia it is called “Chinese catarrh,” in Germany and Italy the “Russian disease,” in France the “Italian fever,” and so on; each nation assigning to some other country the onus of having originated it.

It is a disease which occurs suddenly, and assumes the form of an epidemic. It rarely stays in any particular town or city for more than a few weeks, and then passes on to fresh scenes. A recent epidemic is supposed to have passed from Chinese Tartary to Russia, Germany, Holland, England, Scotland, and finally America. What it is due to, or where it originates, or why it travels about in this eccentric manner, is not known. It is not a question of soil, for it attacks those who live on the hills just as frequently as those who dwell on the plains. It has no particular connection with the season of the year, and does not depend in any way on

variations in temperature. It seems to have little to do with the prevalence of fogs or mists, or with barometric pressure, or the amount of ozone in the air. It attacks not only men, women, and children, but also dogs, horses, and cats.

It generally begins with the symptoms of an ordinary cold in the head, and if the patient is not on the alert he may not suspect the real nature of his attack. In a few hours, however, he begins to experience an incredible sense of languor and weakness, which quickly incapacitates him from exertion of all kinds. He not only cannot get about, but he feels as if he could hardly lift a finger. He lies on the sofa during the day, goes to bed early, and gets up very late. His skin is hot and dry, the pulse is quick, there is some cough and wheezing about the chest, and there may be persistent vomiting or diarrhoea. This condition lasts a week or more; and even when the symptoms of the acute attack have passed off, the prostration is still very great, and may not be entirely recovered from for several months. Bronchitis—or, at all events, bronchial catarrh—is not at all an uncommon accompaniment, and this naturally increases the gravity of the illness.

The mortality from influenza, when it occurs in an epidemic form, is always very great. It is not usually fatal to young and robust individuals, but the weak and debilitated succumb in large numbers. The immediate cause of death is generally the excessive weakness, and it may be many days or weeks before the patient can be pronounced out of danger.

Much attention must be paid to treatment, and it is never safe to let the disease run its course without the employment of remedial measures. The patient should be put to bed, and kept there. The room should be cool and well ventilated. Milk, or milk and soda-water, should be given freely, and essence of beef may be administered from time to time. Stimulants will be required, and the patient may take a pint or more of champagne in the twenty-four hours. The best medicine is a teaspoonful of the solution of acetate of ammonia in water every four hours, to which may be added fifteen drops of chloric ether or a teaspoonful of sal-volatile. If the bowels are confined, a couple of grains of calomel may be administered at the outset of the disease; but anything like excessive purging is to be avoided, as diarrhoea not infrequently supervenes. Emetics are sometimes recommended, but they lower the pulse and weaken the patient. When bronchitis is a prominent symptom, a large hot linseed-meal poultice to the chest and back, renewed every four hours, will do more good than anything. The inhalation of steam, either from a bronchitis kettle or

a spray apparatus, often proves useful. Excessive diarrhoea may be checked by ten grains of compound kino powder.

During the stage of convalescence, active steps will have to be taken to maintain the strength. A teaspoonful of ammoniated tincture of quinine should be given in a little water three times a day, and sulphate of iron pills may be taken after meals. Food must be administered frequently, and should

be of the most nourishing description. Wine is very necessary as an adjunct, and is to be taken with meals. Exercise in the open air should be taken daily, and no work of any description should be undertaken for at least three weeks; that is, after a serious case. A visit to the seaside or a sea voyage is strongly recommended. The patient will have to recognise the fact that he is very weak, and that it is useless to attempt to do anything.

LEATHER-WORK AND GUTTA-PERCHA MODELLING.

WE are being constantly reminded that "there's nothing like leather," by the frequency with which this material is brought forward to be used for artistic work in some form or other. At the present moment popular taste is all in favour of embossed leather, or *cuir bouilli*, in preference to the better-known "modelling" or "mosaic"; but as, with the fickleness of fashion, it is possible that the reverse may be the case at any time, instructions shall be given for all three arts, in order that workers may take up whichever best suits their fancy. The three divisions are so totally different, that each has to be used for its separate purpose, and it is rarely that one branch of the art can be substituted for another upon the same object. An entirely distinct set of tools, too, is needed for each. Embossed leather strives to emulate the famous leathers used for hangings and furnitures in the olden time, and of which much-cherished specimens are frequently to be seen in our museums and ancestral mansions. Though perhaps requiring less artistic taste in the actual execution than modelled leather, it is often more satisfying to the sense of what is correct in art; the latter being too often apt to degenerate into a servile imitation of wood-carving.

Embossed Leather.—No worker need be deterred from attempting to emboss leather by any expense it is necessary to incur for tools, for in point of fact, with the exception of a tracing-wheel, a fancy punch or two, and a modelling tool, the implements needed are to be found in almost every home: such, for instance, as bone and steel knitting-needles, a bodkin, watch-key, and a sharp strong penknife. Besides these, the amateur must procure a large well-made drawing-board, cold water, salt or alum, sponges, a few soft linen cloths, tracing and transfer-paper, and last, but not least, the leather. The leather used for this class of work is that known as "basil," and costs from 3s. 6d. to 5s. 6d. per skin. When sending for this, care must be taken to mention

the purpose for which it is required, as for the wheeled and cut work a smoother skin is needed than for modelling. The first thing to do is to stretch the leather upon the board. It must be thoroughly moistened on the wrong side with a sponge dipped in water in which a little salt or alum has been dissolved, and must then be secured to the board with tin tacks.

When dry, the leather is ready to receive the pattern, which must be drawn upon a sheet of tracing-paper if the worker is unable to sketch it directly upon the material. By laying the paper on the leather, and following the outlines with any tool sufficiently sharp to make a clear line without tearing the paper, the design should be sufficiently distinct to be clearly visible upon the leather. A bone knitting-needle or crochet-hook, an agate style or a glass pen: either of these will serve the purpose. It is well to begin at the top of the design and work gradually down, or it is likely that the pressure of the hand upon the paper will smooth out the lines of the pattern, and render it indistinct. This done, take the tracing-wheel, hold it upright, so that it will make a clean mark on the leather, not a jagged one, and roll it carefully over the lines of the pattern. A little practice will probably be needed before the inexperienced worker is able to guide the wheel round any curves and angles there may chance to be in the design, but she will soon find that the first finger of the left hand will do much to guide the wheel if she holds it close against the line of the pattern where the wheel is at work. Until a little dexterity has been obtained, it is advisable not to put in the outlines too deeply, for slight markings can often be rubbed out with the handle of a penknife, or with a small ivory paper-entter. When a good outline has been obtained—and this should, when finished, be somewhat decidedly and boldly marked—a smaller wheel should be taken for the finer lines, such as slender stems, veins of leaves, or long stamens of flowers. When

the design is all worked up, the background must be covered with small markings made with a watch-key, or with a plain or ornamental punch, such as are sold for the purpose at good tool-shops. Thus treating the background serves to throw the design into higher relief. When it is finished, the pattern must be once more carefully overlooked, to see that none of the outlines have been lost in doing the background; finally, any border lines needed must be put in with the wheel by the help of a true and strong ruler.

Cut Embossing.—Thus much for the simple wheeled work; now for "cut" work, which, being more elaborate in execution, lends itself to more intricate patterns, which require a higher state of finish. The leather needed is cow-hide, which is somewhat thicker than the basil used for wheeled work. It requires damping on the right side, and a knife is used for the design in place of the wheel. The left hand will be found equally useful in guiding and directing the knife, which must be held upright, so that the incisions made are perpendicular, and do not slant in the slightest degree. The worker must not use so much force that the leather is cut entirely through, but about half its thickness only should be pierced.

The lines next have to be carefully raised with a modelling tool. This may quite easily be done with an ivory nail-cleaner, a small paper-knife, a slip of wood, or some similar implement. As one edge of the slits is raised, the other is pressed down. This raises the design; then, if the leather is

turned wrong side uppermost, the relief effect may be still further heightened by the use of various tools, chosen according to the requirements of the pattern. The end of a knitting-needle, the head of a large bonnet-pin, or the butt end of a penholder, will often serve as a rough-and-ready modelling tool. The relief, if the artist is careful, may be raised

without much difficulty to the height of half an inch. When this is done, the leather must be turned again, and the background dotted with a watch-key or with a fancy punch. This operation, also, will serve to increase the height of the relief. Sometimes the raised portion is filled in at the back with meal and sawdust mixed into a paste with water, and in any case this should be done before the work is made up.

Special attention in working tooled leather must be paid to raising and depressing the cut edges, which must on no account show that the appearance of high relief has been gained by the use of the knife, but must look as if this has been done by modelling only. The work is not



Fig. 1.—BOOK-COVER IN EMBOSSED LEATHER.

intended to be so highly raised as to resemble wood-carving, but those who have been accustomed to execute brass repoussé will find their skill of the utmost use to them in working upon leather. Another point to be carefully attended to, is the keeping the material moist enough to render it pleasant to work upon, and yet not wet enough to discolour it, or to make it pulpy, or liable to be more broadly impressed by the tools than is necessary. A camel's-hair brush is convenient for damping the leather, when needed in certain places only.

The design may be greatly enriched, when colour is appropriate, by the use of lustre and metallic paints. These have a richer appearance, and give a

It has the merit of being practically everlasting, for neither damp nor heat affect it in the least, and it improves rather than deteriorates by age.



Fig. 2.—MODELLING TOOLS.

better resemblance to the old work, than ordinary oil-colours.

Embossed leather, when simply wheeled, and not raised at all, is suitable for ornamenting the seats and backs of chairs, and for book-covers and blotters. When raised in high relief, it is better suited for caskets, panels of doors, screens, and similar purposes. The book-cover given in Fig. 1 is of leather that is only slightly embossed, the background being simply dotted, as being more appropriate than an elaborately-punched pattern. In so small a design, too, the working-up needed is next to nothing; but the worker will find that more delicate handling of her cutting tool is required than in a larger and bolder piece of work.

For embossing, conventional and geometric designs are more appropriate than any which strive to represent natural objects. There are many designs amongst Celtic art, of intricately-interlacing scrolls and elaborately-twisted bands, which are very effective in wheeled leather. For the embossed work, again, large flowing patterns in the Renaissance style, of scrolls, conventional leaves, fruits, and flowers, are the most appropriate, but hints and suggestions innumerable can be obtained from careful study of any collection of art treasures. Embossed leather certainly commends itself to those who like an art in proportion to its antiquity; for still preserved in the British Museum are some specimens dating from about nine hundred years B.C., and a cross from the vestment of a Coptic priest which dates from 640 A.D.

Modelled Leather.—Although designs of flowers are frequently used in leather modelling, it stands to reason that the delicate texture of the petals can scarcely be reproduced satisfactorily in so substantial a material, and the worker will therefore find that she will gain a far better effect by the use of leaves or fruits. As these are generally disposed naturally rather than conventionally, it is very necessary that the actual objects themselves should be taken as models; and it is according to the attention paid to the way in which they grow, and the copying of this growth, that success or non-success in this style of leather-work will be attained. The worker who proposes to do a large quantity should provide herself with a number of leaves, and dry them carefully, in order that she may have the natural models at hand in winter as well as in summer. When the leaves are such as will not bear pressing well, a paper pattern should be cut, the principal veins carefully drawn, and the name of the leaf written upon it. It should then be set aside till wanted. At the same time a sketch should be made of the sprays of the plant, showing how the leaves are disposed upon the stem. This, too, should be carefully named and kept. It is, to most people, part of the pleasure to be able to do the work from the very beginning, but it is possible to buy paper patterns of many kinds of leaves and flowers all ready for use. For large fruits, a wooden mould is necessary upon which to shape them; these can also be had ready-made, but we shall have occasion to refer to them more fully later on.

Materials and Tools.—

The leather required is of two kinds, one considerably thicker than the other, and known respectively as "basil" and "skiver." The leather varies in

price from 3s. 6d. to about 5s.; and as each kind is apt to differ slightly in thickness, it is well to mention, when ordering, the purpose for which it is



Fig. 3.—BELL MOULD.

needed; and if required to match any work already begun, a pattern should be sent with the order.

The tools differ according to the design to be executed—that is, as far as the different moulds and moulders are concerned. A few of the principal are illustrated in Fig. 2. Numbers 1, 2, and 3 are made of boxwood, and are used for pressing and shaping the leather into concave shapes, according to the purpose for which it is wanted. Fig. 3 shows a mould used for forming bell-shaped flowers, such as convolvuli. The leather is laid on the top of the mould, and worked down with the moulder which best fits it. In the same way is used the berry mould in Fig. 4. The circle of leather is placed over any particular hole the size of the berry, and is worked round and round with the spherical top of the moulder in Fig. 2 until the desired shape is obtained. Besides these small tools, to which we shall have occasion to refer hereafter, will be required some copper wire, at 4d. a ring; scissors, with one blade notched, for cutting the wire, and costing 1s. 6d.; a pair of small forceps, price 8d.; a veiner, or flat steel tool such as that in Fig. 5, for making outlines and veins, price 1s. 3d.; a penknife, hammer, tacks, pins, staining for finishing the work, glue, cotton-wool, and a stout board or old firm table for cutting out the leather upon. These tools and all other

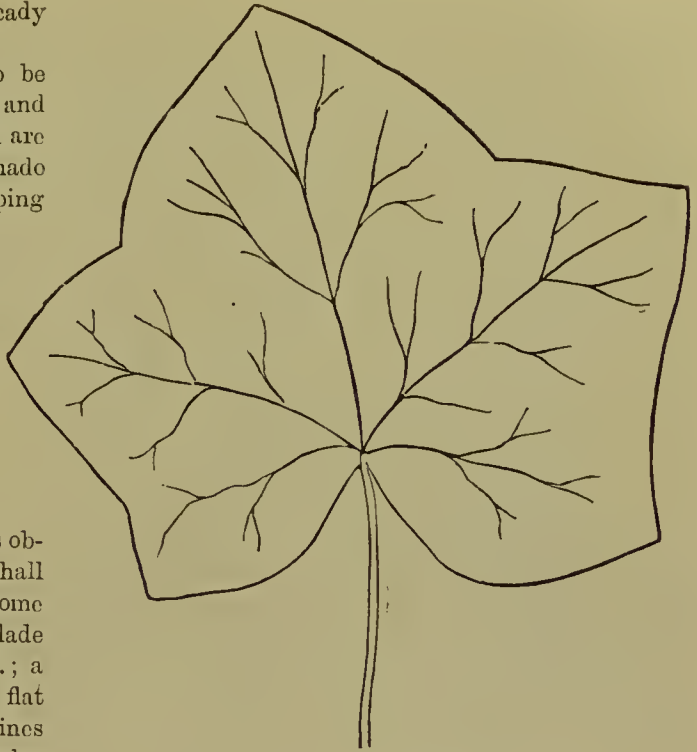


Fig. 6.—IVY-LEAF, SHOWING THE VEINS.

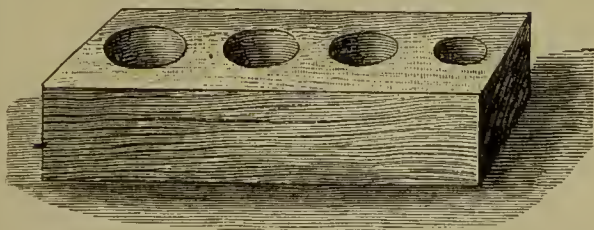


Fig. 4.—BERRY MOULD.

requisites for the work are to be procured from Messrs. Hanson Bros., 56, King Street, Southport. The need for several other minor implements will arise as the work progresses, but many of them can be readily made by the worker herself if she is



Fig. 5.—VEINER.

capable of using a penknife deftly, and can supply herself with a few odd scraps of wood which she can shape into the forms required. In these days, when the *Slojd* system of carpentry is so much learnt by girls, there should be no difficulty about this.

Leaves.—We will begin with leaves, these being easier to manage than flowers, as requiring less elaborate making up. A good pattern for a beginner to try her skill upon is that in Fig. 6. Ivy has also this advantage—natural copies can be easily procured at all times. To make such a leaf, take some of the basil, fasten it down right side uppermost to the cutting-board with tacks. Take a sponge, dip it in cold water, and moisten the leather with it. Wipe off any superfluous water there may be with a dry sponge or a soft cloth, then lay the pattern leaf upon it, and mark out the shape very carefully with a steel knitting-needle or a fine tracing-wheel. Do not use a lead pencil for this purpose, as the black lines are very often left along the margin of the leaves when finished. Cut out the leaf with the knife, being careful to follow the traced pattern accurately. Cut the leather with the knife held somewhat in a slanting direction, so that the edges are rather thinner than the rest. This bevelling may often be improved, after the leaf is cut out, by laying it wrong side uppermost upon the board, and paring off the edges with the penknife. The worker should take care even of the smallest snippings that are cut off, for they are all likely to be useful by-and-by in forming the smaller portions of the design. At the same time she may economise the leather much by fitting in the patterns as closely as they will set one against

another. As each leaf is cut out, place it in a basin of cold water, and leave it there for two or three minutes; then take it out, wipe it carefully with a soft cloth, and mark out the veins. The leaf should, for this operation, be laid upon a pad made of several folds of linen. The veiner is used to trace out the veins—a somewhat heavier pressure being used for the thicker ribs than for such as need merely tracing with a fine line. The tool should be drawn in a direction away from, not towards, the worker, and it should be held much in the position of a pen or pencil. Now take the leaf, and if it has become quite dry, moisten it again, lay it wrong side uppermost in the palm of the left hand, and work it about with one of the moulders shown in Fig. 2, until it takes a naturally concave form. It is better to do this operation gradually and gently, than to be in too great a hurry to try to force the leaf into shape. This will cause it to “bulge” rather than to take a gradual and gentle curve. The leaf must not be allowed to get dry, or it will not be easy to work it. Very likely the operation of moulding will have smoothed out some of the veins; if this is the case, they must be carefully made again as before. A pattern of the leaf, showing the principal veins, is given in Fig. 6. Here, the stalk is made in one piece with the leaf, so only requires rounding by being rolled between the finger and thumb, which are kept moist all the time. In some leaves, as will be explained, the stalk is not so easily made. The worker's ability to copy Nature more or less successfully will be put to a sufficiently severe test by the method in which she models her leaves, and the graceful curves she manages to achieve with the moulders. In Fig. 7 is a convolvulus leaf which



Fig. 7.—CONVOLVULUS LEAF, MODELLED.

has been modelled from its original flat shape into one which as nearly as possible reproduces the curves and folds of natural specimens; and another leaf, in full working size, is given in Fig. 8. When the leaves are satisfactorily worked up, they must be set aside to dry gradually. It is better that they should be left to dry in a warm room, than exposed to either fire or sun, as this is apt to render them brittle. They should not be

mounted till the next day, when they will be so far set that their shape will not be disturbed by this operation.

All leaves are made on the same general principle;



Fig. 8.—FULL-SIZED LEAF IN LEATHER.

but for cutting out a leaf with so many intricacies as a fern, the small scissors will be found more convenient than the knife. Leaves that are made of leather of sufficient thickness can be strengthened by having a piece of wire run down the back, through the leather, and down the middle of the stalk. This wire is concealed beneath a thin slip of leather which is glued over it at the back. Sometimes a sufficient support is given by a slip of leather without the wire. Stiffening fluid is to be had ready prepared, and is occasionally used for such designs as are somewhat straggling, and so unable to keep in place without some such addition. Under ordinary circumstances it can quite well be dispensed with. It cannot be too strongly impressed upon the worker that she will not be able to mould the leather gracefully without keeping it just moist, for as soon as it is dry it becomes stiff and unmanageable.

Flowers.—It has been shown that leaves need a careful study of the natural models in order that a thoroughly successful effect may be gained, but still more attention is necessary when flowers are to be the objects of the worker's skill. It is well to gain proficiency in modelling leaves first, and then to begin with the simplest flowers, and those that are not very small. Single flowers, such as dahlias, anemones, wild roses, or geraniums, are the easiest.

The petals are cut out in basil, just as has been already detailed for leaves; the edges are bevelled off, so that they are as thin as can be; and they are moulded in exactly the same way. When the flowers are made of separate petals, it is necessary to model a foundation upon which they can be fastened. This is made of chips of leather, which are moistened and rolled tightly together between the fingers till a compact mass is formed the right size. At the lower end of this make a hole to receive the stalk of the flower, which must be secured in its place with glue. To the top of this foundation are glued the petals, each one being curved so as to overlap or alternate with the one next it, according to the model. The stamens are made by cutting a tiny piece of leather exactly like a miniature comb. At the top of each tooth, which is bevelled so as to be round instead of flat, is glued a wee piece of leather to answer to the anther. This, it will be noticed, is round in some flowers, hammer-shaped in others. The "comb" is then rolled up tightly, and glued in the middle of the petals on the top of the foundation.

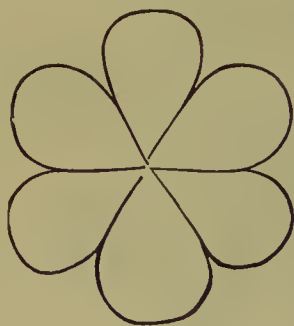


Fig. 9.

Some workers prefer to make the petals of single flowers out of one piece of leather only. The petals in this case, being united at the base, have a rather more clumsy appearance than when they are formed each one separately.

For bell-shaped flowers, a mould such as that in Fig. 3 is required. Cut a round piece of basil, remember to keep it damp, place it on the top of the mould, press it down, and work it about with a moulder until it is free from wrinkles, and has been pushed as far as it will go down the mould. Take the scissors, and cut away the edges of the leather which project beyond the margin of the mould. Mark in any veins or ridges there may be in the natural flowers, pierce a hole at the bottom to hold the stem, and take the flower out of the mould. It is possible to make blossoms of this shape without using any mould at all. Cut a fan-shaped piece of paper, then lay the two sides together, and trim the pattern until it is found that they join symmetrically, and make a good and even bell. Glue the sides together, and work or model the leather to the desired form. For flowers of this shape it is often possible to cut the stamens in one piece with the stem. Cut the tiny slip of leather required for the stalk, and slit one end of it like a fringe; bevel off

these tiny strands, and add the anthers. Then slip the end of the stem downwards through the hole in the point of the bell, and draw it down as low as the stamens will allow it to go. The calyx of these bell-shaped flowers is often formed out of one piece of leather cut into the shape of a five-pointed star, with a small round hole in the middle for the stalk.

A camellia is by no means a difficult flower to model, though it is made up of a good many circles. Fig. 9 shows one of these circles, which it will be noticed is made up of six divisions cut all in one piece, and which is shown in the figure of about one-third the actual size. The circles vary in size according to their position, nearer to or further from the centre of the flower: the number of circles also must differ according to whether the flower is to be large or small;

five circles will make a flower of medium size. They are kept together by the passing of the stem through a hole bored in the exact middle of each circle, and the petals are moulded into the natural form with one of the smallest modellers, due attention being paid to the manner in which those nearest the centre are

folded tightly one over the other. Each circle should have a tiny touch of glue at the base of one or two of the sections, to prevent them from moving round the stem when the flower is handled. Dahlias are made much in the same way. One of the circles is given in Fig. 10, but the moulding is slightly different, a more even and round depression being made in the middle of each petal. Lilies are favourite flowers, owing to their size, which renders their modelling an easier task than that of the smaller flowers. They are made in two circles, each cut into three petals. These are laid one over the other, so that the petals alternate one with the other; a few touches of glue are used to keep them from slipping. It is convenient to have a mould the shape of the interior of the flower upon which to set it whilst modelling it. An ingenious worker will soon find something about the house of the desired shape—the extinguisher of a candle-stick perhaps, or the glass stopper of a decanter, which may be steadied in the decanter itself or in a vase, or something that is not quite so tall. Failing this, she may make a mould for herself of any desired shape, by mixing powdered plaster-of-Paris with glue, or by soaking old newspaper in water till it is quite pulpy, and mixing this with paste or glue. In forming a lily, the stamens must

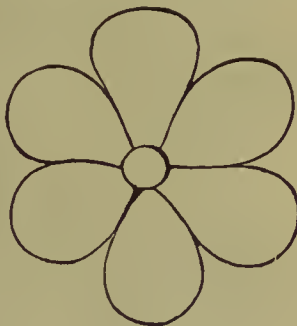


Fig. 10.

be made each one separately, the hammer-shaped anthers added, and the whole glued into the interior of the flower. The pistil may be made in one piece with the stem.

The passion-flower is a blossom which specially requires a natural model to copy from, and it then lends itself well to twining round crosses, and other articles. Some idea of the appearance of this flower when made in leather may be gained from Fig. 11; but it is so complicated that it is well for none but experienced workers to attempt its modelling.

Buds. — Buds of large flowers should be made as if a whole flower were to be shaped; but the stamens, of course, need not be added. The leather is then twisted or folded, and squeezed up closely till as good an imitation as possible of the real thing is obtained. In the case of small flowers, the buds have to be made of a flat piece of basil rolled up to the correct shape. Rose-buds and others that are short and plump in form are made of a number of small chips and snippings of leather left from larger work. These are rolled together into a stiff paste with glue, and are then moulded into shape and fixed to the end of the stem. *Convolvulus* buds are made of an oblong piece of leather twisted round as one would twist a scrap of waste-paper. The calyx is glued at one end, the stem passing through the middle of it into the bud. There is great scope for artistic work in the making of buds, especially those which are half open, and in which the petals of the flowers are partially visible. Much of the good effect will depend upon the care with which the edges of the petals are bevelled, to make them appear as thin and delicate as possible.

Stems. — Stems are usually formed by cutting very thin slips of basil, moistening them, and rubbing them with the fingers upon the board, which should also be damped, till they are quite round and of equal thickness along their whole length. If they are to be stiff, paint a little glue over the leather;

if they are required firm, and yet flexible, lay a piece of wire on the leather before beginning to roll it, and then roll until it is covered.

Tendrils. — When a piece of basil has been rolled in a long slender stem, slightly thicker at one end than at the other, paint it with glue, and twine it round an oiled pencil, knitting-needle, or round stick of some kind. Let the thinner end be less closely twisted than the thick end, and leave the last half-inch or so not twisted at all. This is the way in which tendrils are made. Leave the twists to dry on the pencil, then draw it carefully out.

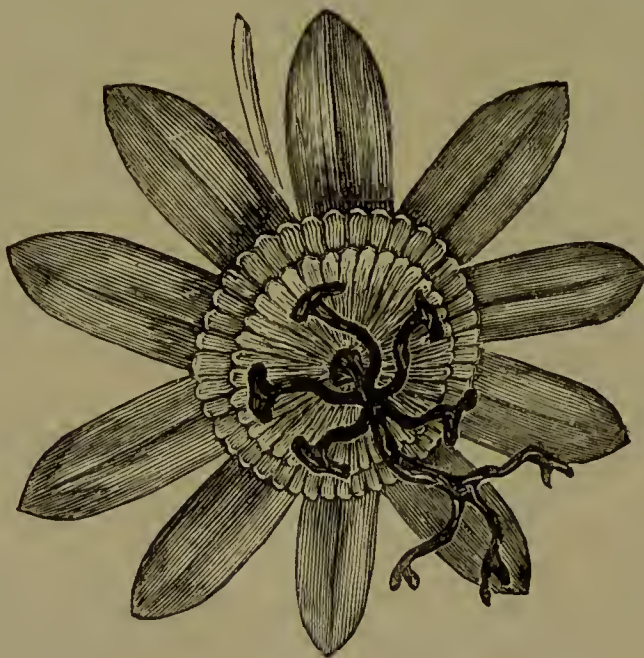


Fig. 11.—PASSION-FLOWER IN LEATHER-WORK.

Thorns. — Prickles and thorns may be contrived in one of two ways. The simplest of all is to take a wee snip of the leather, to moisten it, of course, and to mould and cut it until it is the correct shape. The better plan—especially if the thorns are of some considerable size, such as those on rose stems—is to get a natural one as a model. Procure a piece of gutta-percha

about the size of a thimble, warm it, and roll it into a convenient shape; then take the thorn, and press it into the gutta-percha till the base is level with the surface. Lay it aside till it is thoroughly set, then take out the prickles with a pair of small forceps. Get a tiny paint-brush, oil the inside of the mould slightly, and push into it some leather paste, made of the tiniest scraps of leather soaked and pressed together. Leave the mould till the next day, when the leather will have become sufficiently hard, and then remove the thorn. To fasten thorns securely to the stems to which they belong, it is necessary to scrape with the knife a depression on the stem exactly the size of the base of the thorn, which may then be fixed in place with glue.

Fruits. — Fruits and seed-vessels are always effective when well modelled in leather; they are made in many different ways, according to their shape and size. The moulds necessarily vary much,

according to the fruit: some may be bought ready-made, for others the worker must depend upon her own ingenuity.

As grapes and vine-leaves are always effective, we will consider them first. There are three ways of making these. Small wooden moulds are to be had (marbles answer as well), over which round pieces of skiver (the thinner make of leather) are very tightly strained, and tied together at the top with strong thread. All superfluous leather is cut away, and the thread also, when the grape is thoroughly dry. The stem is of wire, made at one end into a little knob by twisting glued thread round it: this is fixed into the leather at the bottom of the grape. Next cut a tiny circle of leather, and push the stem through it. Pass it right up to the grape, glue it firmly to the fruit, and rub down the edges with an ivory paper-knife or one of the modelling tools. The second but more rough-and-ready way of manufacturing grapes, consists in taking a number of small chips, glueing them, and rolling them, with some amount of pressure at first, in the palms of the hands until

they are the right size and shape. The third method calls into requisition the mould shown in Fig. 4. Here a small piece of skiver is pushed and worked into the mould, much in the way already described for bell-shaped flowers. The superfluous leather is then cut away along the edge of the depression. When set, the half-grape is taken out, and a second one made in the same way. The two halves are then stuffed with cotton-wool or a mixture of glue and sawdust, and glued together, the seam being hidden by rubbing it over with one of the modellers or with a paper-knife. Any small round fruits can be made in the same way as grapes. Grapes in leather-work are necessarily grouped or put together much more loosely, or farther apart, than in the natural bunch. Fig. 12 represents a bunch such as are shown mounted in various ways in subsequent figures.

It is when large fruits, such as pears, oranges, lemons, peaches, apples, and plums, have to be made that more skilful modelling is needed. Such fruits as these last-named may often be made over a natural one as a mould. Oil the fruit slightly, but all over; warm some gutta-percha by soaking it in hot water. The gutta-percha is the same as that used for making imitation Barbotine, and is sold in thin sheets. Stretch it evenly over the whole or a part of the fruit,

according to whether a model of the entire fruit is needed, or of only one-half. Press it well into the depressions and any clefts and furrows there may be, and when the gutta-percha joins, warm it again over the steam of boiling water, and rub the edges well together. Leave the fruit to harden. Care must be taken to choose a fruit that is not very ripe, or it will be too soft to stand the pressure necessary to get the gutta-percha to set closely to it. When set, take a knife, and if the mould is entirely covered with gutta-percha, cut it cleanly in half, and take out the fruit. It is in the two half-moulds of gutta-percha that the leather fruit has to be modelled. Oil them, then soften the



Fig. 12.—GRAPES IN LEATHER-WORK.

leather; lay it on the cast, and press it in thoroughly with the round modeller, using a revolving motion, so that it sets closely over the whole of the inside. Cut the edges of the leather even with those of the gutta-percha, and leave the half-fruits till dry and set. Then take them out of the mould, glue the inside of the leather fruit, stuff it with wadding or sawdust and glue, pushing it in well, but not so violently as to injure the shape; then glue the two halves together, moistening the outside of the seam and rubbing down the edges. In the case of plums, peaches, and nectarines, the join should be so arranged that half of it corresponds to the natural cleft down the side of the fruit. Pears, apples, and oranges are most successful when they are moulded with the join running round them, not down their length. Should it be visible when the work is

mounted, it is easy to hide it with a well-modelled leaf. Pomegranates are always popular, owing to the effect that may be gained by splitting the seed-vessel to show the seeds inside. A wooden model is required for this, and is usually made with one flat side upon which the seeds are glued. These are modelled in the smallest mould, and glued on. The basil for the outside is laid over the mould in strips, to mark the natural furrows of the fruit. The strip which is to be placed near the seeds must be arranged so that it slightly overlaps them. This is not a difficult fruit to make, but requires neatness in finishing off the ends. The ends of the straps of leather are tied round a piece of wood at one end of the mould, which is made on purpose to receive them. The tie can be removed after the fruit is finished.

Small compound fruits, such as raspberries and blackberries, need mounting upon light wooden foundations, also to be procured from Messrs. Hanson Bros.,

which save workers much trouble, as they have holes ready-pierced for the stems, and can be depended upon as being well made and correct in shape. The berries are made by cutting out a circle of leather, and putting it into the smallest mould on the block shown in Fig. 4. Work it in the manner before described, then glue this half-circle on the wooden foundation, and continue to make and fasten on the fruits until this is quite covered. The seeds are made of minute fragments of skiver rolled into the desired shape, and glued into a little depression, made with the point of a pencil to receive them. The seeds on the surface of strawberries are made by pinching up a tiny piece of the leather with a small pair of pincers, care being taken not to snip it off altogether. Aeorns are modelled much in the same way as grapes, over a wooden foundation. The cup is made of the thin leather also, the rough appearance being given by pinching up the surface of the leather all over it with the pincers. Fir-cones require a wooden foundation, the scales being carefully modelled, and each fastened on separately. Pine-apples, too, are

made over a wooden core. The leaves for the crown must be moulded first, their sizes being graduated so that the smallest come nearest the top of the mould. They must be worked up with the modelling tool to as good a resemblance to Nature as possible, and are glued or put on with tacks to the foundation. Special moulds are sold for making the scales. The basil is pressed into the grooves as usual, the edges are pared off, and when dry the scales are glued to the wood. The smallest scales are placed towards the top of the fruit, and they are arranged so as to grow larger and larger as they get nearer the base.

Small berries such as currants or ivy, bryony or holly berries, are made simply by rolling together with glue a number of tiny chips of leather until they are quite round and smooth. When a group of these small berries is required to be fastened down to a flat surface, so that only half of each fruit is seen, they may be made in the mould. The edges are then glued, and the berries fastened to the foundation, one on the

top of the other, more being added until the bunch is large enough. Nuts may be contrived by using the natural ones as moulds, the join in the leather being arranged so that it is hidden beneath the bract.

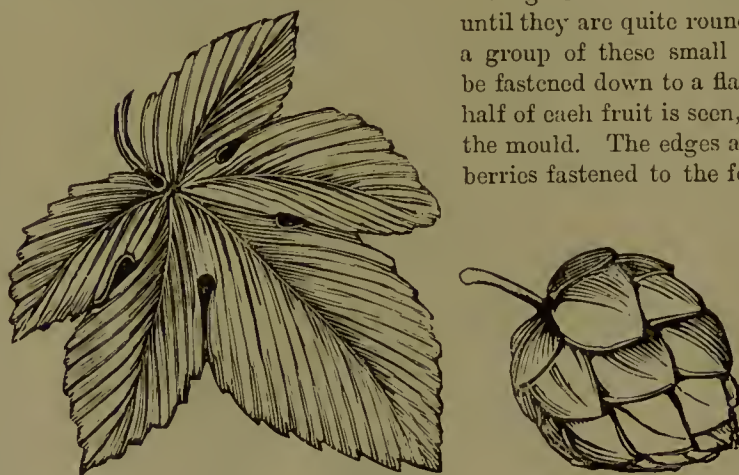


Fig. 13.—HOP BLOSSOM AND LEAF.

This is made of two pieces of basil, which are glued to the base of the nut, and curved and modelled so as to close slightly over it. Two or three nuts should be glued together, a short stem being fastened in between them.

Hops are always popular, because they are effective, and one of these and a leaf in the natural size are shown in Fig. 13. In the flower-stand (Fig. 14) a small spray of hops is twined up the leg of the stand. Hops may be managed in two different ways. Some workers cut each section separately, fastening them round a core made of a small piece of leather rolled up into the required shape. The easier plan is to cut the sections in a series of circles, the middle one of which is the smallest. Each circle is moulded into a concave form. They are threaded on the wire stem, which is passed through a hole in the middle of each. The stem has a small knob of leather fixed at one end, to prevent the circles from slipping off altogether.

Mounting.—Enough has now been said to give the worker an insight into the general principle on

which all the main forms of fruits and flowers are constructed, and she should therefore find no difficulty in copying any design she may wish to produce. The next thing to be considered is the combining and mounting the different sprays into graceful and elegant groups. Brackets, plaques, mirrors, and photograph-frames, easels, book-racks, and inkstands, can be had specially prepared for covering with modelled leather. The wooden foundations may either be left uncovered, and stained or painted, or may be covered with velvet or plush, over which materials leather-work always looks rich and handsome. If the bracket is thus covered, it is advisable to make up the wreath before fixing it; but if the wood alone is used as a background, each individual spray may be nailed or glued on as required. In this case, which is perhaps easier for a beginner to understand, it is necessary to make first a stout branch or centre stem of leather, to which the various leaves may be fastened. The smallest portions of the design will be quite firm if they are secured with glue; the larger ones will need tacks or brads; what are known as gimppins also serving the purpose well. The main branch is fastened to the wood by means of straps of leather, which are laid over it, and kept down on each side of the branch with a nail.

The leaves and flowers must be so disposed as to hide these bands. Should the nail or pin that holds down any part of the work be visible, it may be painted over with glue, and hidden between a wafer of leather glued to it, and rolled down smoothly, so that the join is not visible. Sometimes it is necessary to fix side-branches to one stout solid one. It is often possible to do this by cutting a three-cornered slit in the larger branch, through which the small one is pushed. The flap that was cut to hold

the twig is folded down over the slit, and glued or nailed into place. The worker must remember, when using glue, that it is very apt to stain the leather, so it must be laid on sparingly with a small brush. It is often advisable to add wire inside a stout branch, so that it can readily be bent to any desired shape. The wire foundation can be made as

thick as required by twisting several strands together. Directions have already been given for making stems over wire, but it will be found that a lesson from a practised teacher will be of more service in mounting the work than the perusal of reams of printed matter.

In Fig. 15 are shown a bunch of grapes and leaves mounted upon the corner of a mirror. We need not question the utility of a mirror thus decorated, for now-a-days this is little considered with regard to fancy articles of this sort. The main stem of the spray can be fastened with tiny tacks to the frame of the looking-glass, the minor details

being secured with glue. Grapes, again, form the decoration of the bracket in Fig. 16. Here, as there is a firm foundation to work upon, tacks instead of glue may be used to secure the leaves and stems, and these can be easily hidden beneath the smaller leaves and stems. The top of the bracket may be either covered with plush or left plain. The little moulding

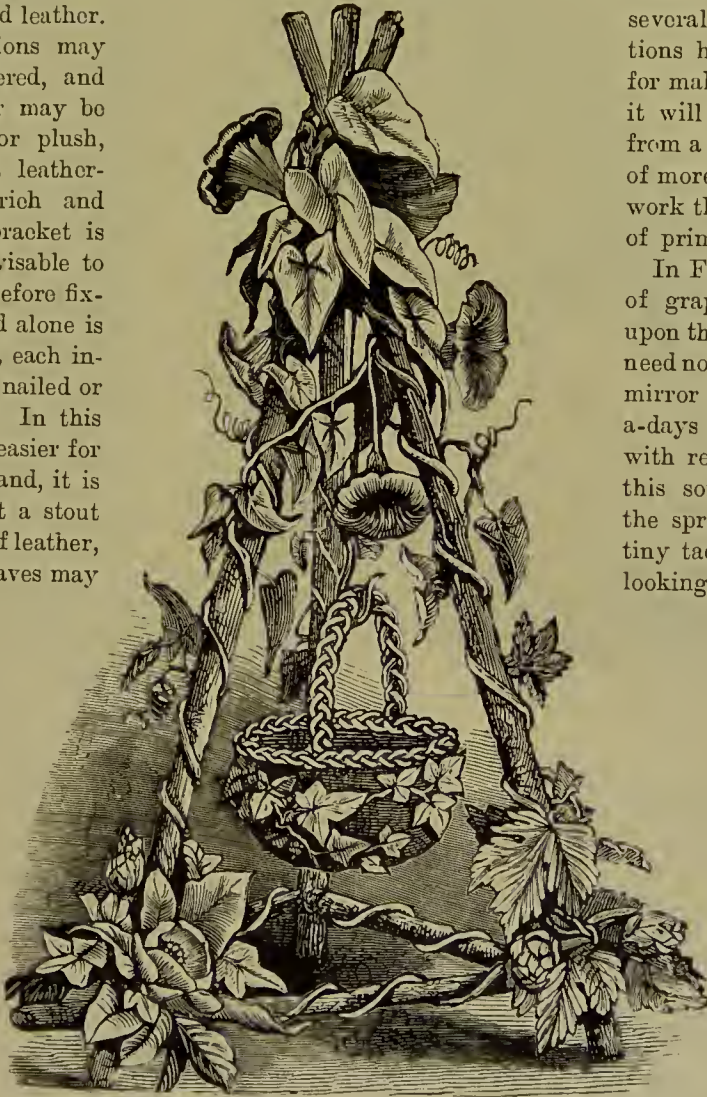


Fig. 14.—FLOWER-STAND IN LEATHER-WORK.

laid round the edge of the shelf is made of a strip of basil rather over an inch in width, and as long as the skin will allow. Moisten it thoroughly with water, and dry it; then place it on the board, and fold it down the middle with the wrong side outernmost. Fold back the two sides down the centre, thus bringing the smooth side of the leather again outside. Make the points by pinching up the leather between the thumb and finger; or, if flutings are preferred, goffer it with a pair of goffering scissors, then cut the



Fig. 15.—MIRROR WITH LEATHER-WORK DECORATION.

leather into strips. If it is required waved instead of straight, moisten it well, and pin it out on a board in the shape required, then leave it till dry.

A favourite plant for twining round upright articles, such as flower-stands and easels, is the convolvulus, and this appears in two of the illustrations given here. In the stand in Fig. 14 hops were mixed with the convolvuli, while the hanging basket is decorated with ivy. This makes a particularly pretty little trifle, but the worker must beware of making the trails stiff and angular. Small easels, such as that in Fig. 17, are to be had very inexpensively. It is advisable to make up the convolvulus sprays upon stems with a wire down the middle, as they are easier to twine round their support than when quite soft. Very little fixing is needed, which is an advantage, as generally the wood of which these articles is made is too thin to allow of a nail being driven into it successfully.

Vases.—It is by no means essential that leafy and floral forms alone should be copied in modelled

leather, for it is quite possible to make really elegant and old-world-looking vases and caskets, and even figures. This is done much on the same principle as the modelling of the larger fruits, such as apples and pears. It is a great saving of time to buy a common, but well-shaped, vase or wooden cup or bowl, and make it do duty as a model. In the case of so simple a form as this, the leather, which must be soaked until it is soft, must be laid over the vase, which should be slightly oiled, to prevent the material from sticking to it. The vase must be allowed to get perfectly dry, and may then with a sharp knife be cleanly slit down each side, so as to make two halves. These are easily taken off the core, and carefully glued together along the cut edges, which are rubbed down with a modeller. The vase must be once more allowed to dry, when it can be ornamented in any suitable fashion, much in the style of that in Fig. 18. The leaves and berries may be coloured in their natural tints, the background being left brown.



Fig. 16.—BRACKET.

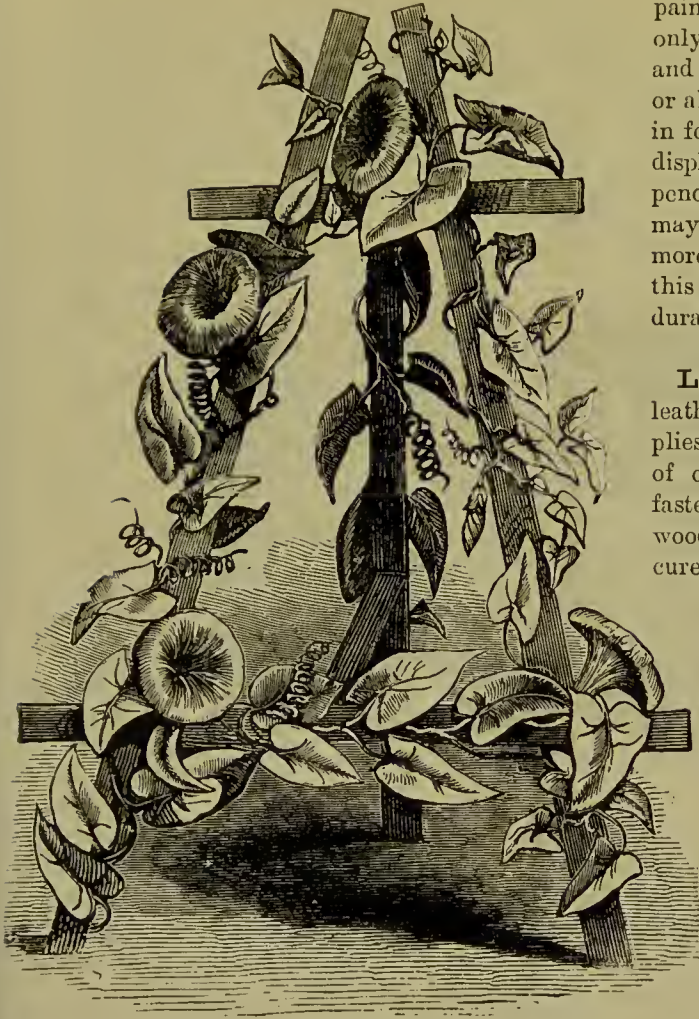


Fig. 17.—EASEL FOR PHOTOGRAPHS, IN LEATHER-WORK.

Figures and busts can be copied in leather from the cheap plaster-of-Paris statuettes often sold at a very low price in our smaller shops, and which are frequently good in form, though inferior as to material. The figure must be oiled, and then covered with sheet gutta-percha which has been softened in hot water. This must be pressed with a soft cloth into all the ins and outs of the figure. When cold and set, the gutta-percha must be slit where necessary, and carefully taken off. The inside of the mould is now oiled, and the softened leather pressed into this also. The inside of the leather sections are then stuffed, and finally glued together, exactly as before described for the modelling of fruit, much of the good effect depending upon the way in which the edges of the join are rubbed down.

Finishing the Leather.—Tastes differ much as to the best method of finishing articles that are either made entirely of or are simply decorated with leather. Some workers prefer to leave them in their natural pale fawn colour, which mellows in course of time to a richer brown hue; others stain the ornament with wood-staining, old oak or walnut being the favourites; others like to

paint the background ivory, and to stain the designs only; others paint the work in different colours; and some few, again, tint the modelling in places or all over with metallic paints. It is evident that in few arts is there so great an opportunity for the display of individual fancy. Those who possess the pencil and spirit-lamp used in burnt-wood engraving may ornament much of their leather-work—and more especially embossed leather—with scorching, this having the advantage of being excessively durable.

Leather Mosaic.—The mention of coloured leather brings us to mosaic, which, as its name implies, is a sort of patchwork executed with a number of odds and ends of differently-coloured leather fastened down to a brown or tinted leather or wooden foundation. The scraps of kid can be procured from any bookbinder, while, if any special colour is wanting, it can be replaced by painting the ordinary kid with oil paints. The design is first sketched on paper, the partition lines of the various colours being indicated. The sections of the design are then cut out, and used as patterns by which the various pieces of kid may be shaped. These are glued to the foundation according to pattern, the edges being pressed down to the background with a fine tracing-wheel. Leave the work under pressure till dry, and finish off by adding any lines, dots, or



Fig. 18.—VASE MODELLED IN LEATHER.

sprinklings of gold that may be required. The appearance of the finished work is well shown in Fig. 19. It is appropriate only to such articles as postcard-cases, note-books, table-napkin rings, book-covers, and photograph-frames; and the smaller each individual piece in the patchwork is, the better the result.

Gutta-percha Modelling.—The practical instructions given above for leather-work apply equally to the modelling in gutta-percha, which is often executed to imitate Barbotine or Dresden china. The gutta-percha, white or brown, is sold in sheets, the white costing 5s. the half-pound, the latter about 3s. A little goes a

long way, from two to three ounces being sufficient for a good large group; hence the cost is not so great as it appears at first sight. Flowers are usually modelled in gutta-percha, and are glued to vases, bowls, and tazzas, being painted afterwards the colour required with enamel paints. The gutta-percha is prepared simply by being softened in boiling water. It can then be rolled out like dough to any thickness, and the sheets thus obtained can be cut with scissors into any desired shape. Should the pieces not be sufficiently thin, they must be again softened in hot

water, rolled out, and cut afresh. The parts of a flower, or leaves, or stems will not stick firmly to the article they are to ornament until they have been allowed to become dry and set, neither can any colour be successfully laid on. Gutta-percha can be painted with oil-colours, but it will need copal varnish mixed with flake white for the first coat.

The commonest vases can be used as a foundation for the work; and by painting them first a good result may be obtained by the use merely of empty Liebig or cream jars, bottles that have held Italian wines, Holland flasks, and any similar crockery of a good shape but equally unpretending



Fig. 19.—LEATHER MOSAIC.

nature. Although modelling with gutta-percha admits of more delicacy of treatment than leather-work, it is better to choose simple bold flowers than to attempt to attain very minute and delicate effects in the working up. Tiny flowers, though perhaps beautifully arranged, are rarely so satisfactory when considered as a whole. White gutta-percha is used upon a white background, and is tinted with pale colours to imitate Dresden china. The designs may be quite successfully mounted upon wooden articles, such as inkstands, frames, easels, caskets, and the like.

GARDENING FOR OCTOBER.

The Lawn and Falling Leaves, &c.—During October, especially towards the latter end of the month, the leaves will be falling in great numbers, and more than usually so should a sharp frost or two occur. These falling leaves should be frequently swept up from off the lawn and the paths also, for with the heavier dews of the autumn, and the probable fall of a considerable amount of rain, the ground cannot possibly be kept too dry. If allowed to lie for any considerable period upon the grass, the latter will be greatly weakened in growth, which still continues to remain in a state of activity, although to a lesser extent than previously. Under

the shade of trees it is never any too strong, even with the best attention: do not, therefore, allow the leaves to remain more than a day or two at the time without being swept up clean. They should also be frequently cleared off the paths: every day, in fact, if there is any extra traffic to cause them to be trod upon, and thus gradually worked into the gravel, afterwards to give additional trouble in removal, and even then in many cases it cannot be done effectively. If only looked at from a sanitary point of view, it is much better to clear them up, for decaying vegetation of any kind is prejudicial to a healthy state of things. But there is also the point of clean-

liness, which always should have primary consideration in a garden, as well as in any other department of the household. Sweeping up will thus be one of the chief items of work for October; it is, therefore, essential to provide a spot for the leaves to be deposited upon, where they may be rotted down to be used as manure, and that with great advantage in all departments of garden work. A spot far removed from the house, and from any place that is often frequented, should be chosen, where they may remain for twelve months, to become well decomposed. In order to facilitate this decomposition a little fresh lime should be kept close at hand, so that some may be shaken over the leaves occasionally; this will also prevent any smell arising that would be likely to cause any annoyance. These leaves, after they have lain for a while, should be turned over and stacked up as closely as possible, to economise room, and also to prevent them being blown about during high winds.

Mowing of the grass generally requires to be done about twice or thrice in October, and needs to be seen to during the driest possible times that can be chosen, so as to prevent a smeary appearance, which cannot afterwards be easily obliterated. Look closely after any weeds of large or coarse growth amongst the grass; these often become renewed in vigour after a dry time in the autumn, when there is an increase of moisture in the soil. All grass that has become long through not being easily approachable by the machine should now be kept cut down closely, so as to form a good bottom. The edgings of flower-beds and borders will also be much better in every way if clipped each time the mowing is done. After every mowing at this season of the year, it is a good plan to sweep the lawn all over, the appearance being greatly improved thereby.

Paths.—Where these have become rough through frequent traffic thereon in drier weather, when it would have been almost impossible to get them again down to a smooth surface, a thorough good rolling should now be given them. The roller should be passed several times over the same parts, after having swept them quite clean, and removed all weeds thereon. This rolling down to as smooth a surface as possible now, will be the means of saving a good amount of loose gravel that would otherwise be swept up and wasted, when frequently sweeping up the leaves. The gravel paths should always be swept as lightly as possible; the work is badly done when any great amount of gravel is swept up. If there is any accumulation of a green or mossy growth, some more of the weed-killing mixture, as previously advised to be used, should be again applied when the paths are tolerably dry: this will

be better than loosening much of the surface in attempting to clean it. Do not forget to look to the traps and gratings in the paths, and see that they are all clear, otherwise the pipes that carry off the water will soon get choked, and prove then to be of but little use. Frequent attention will be amply compensated for in regard to this, and prove eventually to be a saving of labour, as it is also in the appearance of the paths and walks.

Leaves in Gutters.—At this season of the year a weekly or bi-weekly inspection of all of these should be insisted upon, especially if any trees overhang the buildings. They should always be kept as clean as possible, so that the water may pass away freely. The stack heads and down pipes also require to be examined at times, especially when the latter have any bends in them to check the free passage of the water. The best safeguards that we have yet found, after many years of experience, in order to prevent leaves from choking the tops of the down pipes, are the wirework globes which in factories and similar places are fixed upon the gas-burners, instead of those made of glass. Nothing better could, in our opinion, be devised for the purpose, as there is not the danger of choking, which is often the case when anything flat, or nearly so, is used. What accumulation there may be is arrested at once by these wire globes, and the water with a slight rise enters the pipes above it. Nothing more simple could be used for the purpose, and being made of stout galvanised wire, or else galvanised after making, they are most durable. They answer admirably also for the prevention of choking after a heavy fall of snow. The man that does the garden work should be requested to keep a close watch at this season of the year in respect to this work. It is most annoying to have any overflow occur, with the consequent results of damp walls and spoiled paper, which it will take months to set to rights again, just for the want of a little foresight and attention. The wirework globes are cheap enough: in fact, more so than are some of the specially-devised means for the same purpose. When there is no more danger of leaves choking the pipes, then the gutters should be cleansed with a few cans of water poured into them at the highest point; then when snow falls and gradually melts away, the snow-water will pass along freely, instead of, as often occurs, causing an overflow, with its injurious effects.

Climbing Plants.—These will in most cases be soon past their best, chiefly so those of blooming properties. Advantage should be taken of a fine day to thin out some of the weakest wood, so that the remaining portions may get more light and air, and

become the better ripened for another season. Evergreen climbers will not need so much attention in this respect now, but had better be seen to in the spring. They are not so dependent upon the thorough ripening of the growth in the autumn as are the deciduous climbers; the leaves of the former continue throughout the winter to perform their proper functions. Any unhealthy climbers may now receive attention; some advice on this point was given in a previous number, but it might now be added that such can be safely lifted at this season, and replanted into entirely fresh soil. When this is being done, the roots, if looking unhealthy, should be pruned, and the top growth also; this process will often renovate the plant, and give it renewed life and vigour.

Rock-work and similar Plants.—The chief work to be done here at this time of the year is to aim at cleanliness, both from weeds and falling leaves, as also from any decaying foliage upon the plants themselves. Any superabundant amount of moisture now will weaken the plants in the event of severe frosts ensuing later on. It will be a good plan, therefore, to stir the surface of the soil occasionally, to keep it sweet and healthy, and to thin out rather freely any extra thickets of foliage. Ivy is an instance of the latter, which, whilst it is keeping within bounds, is all that can be desired, but when exceeding its proper limits, soon causes injury to other things around it. Some of the Ivy shoots thus thinned out may be pricked off in good soil, with every expectation of a satisfactory number of young plants being raised for planting another season; for these a moist spot should be chosen.

Hedges and their Management.—These are, when in good condition, both useful and ornamental; useful, inasmuch as they form excellent screens and protectors to the garden, and ornamental when a good selection is made, and the hedges themselves kept in good order. The mistakes often made are in allowing them to far exceed their limits, and in permitting them to grow away too strongly at the top, thus getting bare at the bottom, and consequently unsightly. Hedges require at times to be well cleaned out at the base, where there is generally a large accumulation of rubbish; the soil should then be lightly pricked up with a fork, so as to admit of the hedge benefiting by the autumn rains. In cases of partial failure, by reason of a plant dying here and there, or portions of plants, repairs may at this season of the year be very well performed. The same kind of plant should, of course, be selected for this work, and in size according to the needs of the case. A large enough hole should be made to allow

of some fresh soil around the roots, a good watering being given afterwards, and the fresh plants clipped into shape as nearly as possible. Small holes can often be filled up by tying two or more branches together without adding any fresh plants. Hedges often suffer for want of water, and naturally so, because the plants are necessarily planted closely together; they are also often planted on raised ground, and this will tend to aggravate the matter still more. In any such case a thorough good watering should be given, and repeated again a few days afterwards: this will often preserve a good hedge from declining in strength.

New hedges can be planted now in nearly every case, Hollies only being excepted. These should, if possible, be planted about May or June. In preparing the ground for a new hedge, some extra pains taken with the soil will amply repay itself, especially if the ground has been occupied with trees or shrubs previously. In the latter case some manure will be a great assistance, if well incorporated with the soil, for it cannot be added afterwards so effectually. The ground should be dug 2 feet deep, or, in other words, trenched two spits, and well broken to pieces at the same time. Too much pains cannot be given to the preparation and enrichment of the soil, considering that the hedge is a permanency. For general garden purposes the plants should be planted from 1½ feet to 2 feet apart, according to their size and habit of growth. When planted, each one should be secured to a stake, to guard against high winds, which have more effect upon plants when planted in a line than if at a greater distance apart. It is better to tie each one singly than several together, by means of a cross-stake reaching from one to another; there will be less danger of friction and injury to the bark. Some slight cutting is advisable at once, especially at the tops; the chief aim for the first few years should be to obtain a good and well-furnished bottom. A check should, therefore, be given to all shoots that are disposed to gain strength towards the tops of the plants at the expense of those lower down. When the hedges are clipped, the bottoms should be allowed to be slightly the widest at the first start, and the perpendicular of the sides never attempted at once, but gradually be allowed to assume itself as growth progresses.

The following are a good selection of evergreen plants that are well suited for planting to form hedges in the garden, viz.:—Hollies, both green and variegated kinds; the American Arbor-vitæ; *Cupressus Lawsonii* (Lawson's Cypress), a most elegant and beautiful plant for a hedge, of light green growth; the English Yew, both the green and golden-leaved forms, the latter being most distinct during the summer season by reason of its colour; the Portugal Laurel, which

is far better for the purpose than the common kind; the evergreen Privet, very hardy; the Tamarisk, for the sea-coast and exposed situations; and the Box-tree, when small compact hedges are essential. The Thorn or Quick is not to be recommended for garden purposes at all, being so frequently attacked by insects in the summer. Another excellent plant for sea-side planting is *Escallonia macrantha*, which contrasts beautifully with the Tamarisk; the former will grow where there is but little soil for planting in. In protected spots *Berberis Darwinii* might be planted with decided advantage; it has one thing in its favour besides its beautiful growth and blossoms: there is no fear of any one attempting to make a passage through it—its prickly growth effectually prevents this. Plants that annually shed their leaves are not to be recommended for general garden purposes. The best perhaps of any is the Beech, which is often mixed with the Holly, and thus forms a fine large hedge. When hedges have outgrown their dimensions to a serious extent, the best way is to cut them back hard, and thus aim at a young growth again. This should not be done, however, before February or March, just before growth is about to commence. When done, the height should also be reduced in proportion to the width, or all the strength of the young growth will be directed upwards, at a risk of the lower parts dying, or breaking into fresh growth very weakly.

The Planting of Spring-flowering Plants and Bulbs.—This work is far more satisfactory if done during October than if left a month later. The soil is generally in a better working condition; and, when that is the case, the plants always do better. There is also a little more time for them to become established before winter sets in. It may require a little resolution to strip the beds and borders before the early frosts mar their beauties; but it pays in the end, and even at once a more tidy appearance is effected. The plants that have to be taken up should all be removed first, and the ground lightly forked over, leaving all neat and clean. No manure at this season of the year is necessary, to encourage a strong growth in any case being a mistake.

The plants previously recommended to be raised from seed will by the middle of this month be grown into good-sized plants. These will lift, in nearly every case, with a sufficient amount of soil to prevent any check to their growth. In re-planting such moisture-loving plants as the Primrose and Polyanthus, care must be taken to make the holes deep enough for a good covering of soil upon the top, or in the spring they will suffer through drought almost before one is aware of the fact, and give

trouble afterwards in watering to an undue extent. Wallflowers will succeed very well if partially shaded; but when thus situated, they need to be planted rather more closely together. The Forget-me-nots like a moist spot, but will thrive very well in moderately dry soil. The early-flowering Pansies do well under the same conditions as the foregoing. *Silene pendula compacta* is more safely carried through the winter in rather dry soil: in moist and rich soil it grows too strong, and then will be liable to suffer during spring frosts. An excellent hardy edging for all of these spring-flowering plants, and many others also, are the Arabis. They are perfectly hardy, thrive in nearly any kind of soil, and always look well. The green-leaved variety, *A. albida*, makes a neat green edging, which in the spring produces such an amount of flower as to appear one mass of white. *A. albida variegata* is the most effective, all points considered: it is rather stronger in growth, with foliage margined with a creamy white: this also flowers well. This latter kind is valuable both in summer and winter, and should find a place in every garden. Both may be divided at this season of the year or in the spring, after flowering; those who possess a few tufts of either may increase them to a considerable extent with advantage.

The hardy edging plants of other kinds, which we recommended to be planted in April or May, should be allowed to remain as they are till the spring-time again, merely trimming them, so as to keep them within proper bounds, meanwhile. The variegated Arabis alluded to above would make an excellent inner-edging plant to the dwarf-growing green or gray Stonecrops; add to this either the *Silene* or Forget-me-nots, or both if preferred, and a bed is complete in itself that will look fresh and bright all the winter, and very gay in the spring.

When any of these plants are scarce, it does not follow that the ground should lie idle. Several hardy annuals may be sown at once, to flower early in the following spring. For this purpose some of the best are *Nemophila insignis*, pale blue and white; *Saponaria calabrica*, pink; *Leptosiphon aureus*, golden yellow; *Eschscholtzia californica*, for places where there is plenty of room for strong growth. Candy-tufts and Corn-flowers may also be sown. The earlier in the month the better for the sowing of any of these seeds: they will then be fairly up, and making nice little plants, by the time winter sets in. Guard against slugs, as already advised.

Bulbs in Borders and Beds.—These should be planted during the latter part of October, and may very well be arranged between the spring-flowering plants previously alluded to. In this case

the latter should be planted a little further apart—say, from 10 inches to 1 foot, according to their size; then, when the bulbs are growing and flowering, they will form a carpeting or undergrowth to them, and look extremely well. Hyacinths and Tulips are best suited for such kinds of planting, and, when in flower, make a good show without any excessive quantity of bulbs being used. *Narcissi* are far better planted in groups of three or five, and allowed to stand for two or three years without being disturbed; by that time they will have increased to a considerable extent, and afford a supply for further planting. The foregoing bulbs should be inserted in the ground from 4 inches to 5 inches, measuring from the tops of each to the surface. They will not at that depth feel any ill-effects from sharp frosts.

Crocuses and Snowdrops form excellent borderings to beds or the margins of shrubs; so also does *Scilla sibirica*; in fact, all three may, if desirable, be planted in association with one another. The yellow and white Crocuses, the Snowdrops, and the beautiful blue of the *Scilla*, give a most cheerful appearance, with but a moderate outlay, for all are purchased cheaply enough. These bulbs also produce a charming effect when dotted promiscuously upon the lawn, especially so upon slopes or mounds, where they are seen to a better advantage. Those who have never planted any in this way are strongly advised to do so; it answers very well indeed, and is equally applicable to the most limited garden plot as to that of greater extent. When this kind of planting of bulbs is adopted, holes should be made with a dibble as used in planting of cabbages, and some fine soil filled in upon each one to the surface level. The only drawback is that of being obliged to defer mowing the lawn in the spring for a few weeks longer than usual, so that the foliage of each may have a chance of developing, if not finally maturing. Even when thus deprived of their foliage prematurely, they will continue for two or three years in good condition. The old-fashioned Crown Imperial is well worthy of a place; it may be seen oftentimes in excellent condition in cottage gardens, where it is not disturbed from year to year, making a grand show when in flower. It will do well in front of shrubbery borders, where the soil is of moderate depth and fairly good in quality.

Roses.—The month of October is the best season of the year for the formation of new rose-beds, and for the removal and renovation of Roses in general. The plants will thus become partially settled in their new quarters before any severe weather ensues. It always pays well in Rose culture to thoroughly prepare the soil before planting. When new beds are being formed, the ground should be broken up

two spits in depth, and well worked to pieces as it is being done. If it is virgin soil, or that which has previously been well cultivated, a moderate amount of manure (from the farm-yard, if possible) should be added and incorporated with the bottom spit as the work progresses. If the ground has previously been exhausted by cropping or by a deficiency of manure, a heavier dressing should be given, and then worked into both spits. In such a case, where the bottom spit has not seen daylight for probably some few years, and is of good quality, it should be brought to the surface, and the soil previously at the top then put in its place at the bottom. This in many instances will be equivalent to adding fresh soil, which hardly ever need be done unless Roses have been grown on the same spot for several years. In fact, if the soil is of good depth, it is not even then necessary, when deep cultivation can be carried out.

Only this past season we have ourselves re-planted several Rose-beds, many of the plants in which had not been disturbed for fourteen years. We found some not to be thriving well, and others wanted re-arrangement as to size, so all had to undergo the process of lifting, being laid aside meanwhile with their roots protected in soil. This had been well manured for several seasons previously, so in this case no addition was made to it in the way of a stimulant. We were under the impression, which was afterwards fully confirmed, that good enough soil for the purpose was to be found underneath, without any addition being made thereto in any way. The top spit of soil was first taken off and laid aside; the next then had to partially follow suit, so that the third spit could be broken up. Upon this was laid that taken from the top; that previously forming the middle spit and some of the best of the third, or bottom one, being brought to the top. This provided us with quite a different soil, so much so, in fact, that even several who were well acquainted with such matters thought that considerable expense had been incurred in first removing the old, and then substituting fresh soil. The top soil had been regularly manured for years, and was become dark in colour; that underneath was much lighter in this respect, being what is generally termed stiff yellow loam bordering on clay. It looks, in every way just suited to Rose culture: much better, in fact, than that in which they had thriven well for several years previously. This complete change in the nature of the soil is imparting to the plants already renewed vigour and activity, this having been all accomplished without any outlay other than the manual labour expended upon the work, and a few fresh plants to supersede those that were sickly.

The plants themselves when lifted were pruned at the root to a fair extent, all suckers being also

removed close home, and the top growth partially reduced to what one might term "half-pruning"; this latter performance being to counteract any undue strain upon the resources of the plants after such a check in the loss of a quantity of their fibrous roots. After the beds had been prepared, the planting was proceeded with, but no treading upon the soil was allowed without a board to rest the feet upon; this precaution was taken to prevent the soil becoming close and sticky. Holes were made large enough to receive the roots without crippling them, and sufficiently deep to allow of a covering of soil to the depth of from four to six inches. A little fine soil, somewhat dry, was first shaken upon the roots, and then the holes filled up in the usual way; but instead of being trodden with the foot to make the plants firm, a digging fork was used to effect the same purpose, and nearly in a similar way. A good watering was given to each plant afterwards, not because there was any tendency to dryness, but in order to further assist in settling the soil close to the roots. Being standards, each one was at once staked; in fact, in most cases the stake was inserted first in the exact spot for the stem to occupy, this being done to prevent any injury to the roots by thrusting it amongst them afterwards. These details of treatment are given as a guide to those who contemplate a re-arrangement of old plants. If roses are old, and looking partially worn out and scrubby, it does not follow that they need be thrown away; but if treated in a similar way, may be relied upon in nearly every instance to renew their vigour. It may often happen with others, as it has done with us, that there are especial favourites amongst the Roses, which in past years have thriven well, but have shown signs of decline at last. It is a pleasure to see such again assuming their wonted vigour: more so, in fact, than that of a newly-acquired plant thriving well. Under fair conditions Roses do not readily die off; in fact, we look upon them as being rather tenacious of life than otherwise.

As to planting, the same course should be followed with young plants that have been freshly purchased; the additional precaution, however, must be taken of examining the roots immediately the plants are received, to see that they are not in the least dry. This will happen if they have been long exposed to the air and drying winds (especially late in the season), and more frequently occurs with plants that have been purchased at auction sales than in any other instance. By this we mean where they have been lifted and sent some distance for sale, with the probability of a day or two intervening, and no precaution taken to keep the roots moist with moss as they should be, and generally are when purchased direct from the growers. In such cases, with dry

roots, they should be allowed to stand for a little time in a pail of water, into which a few handfuls of soil had previously been stirred; this will form a coating upon them, and prevent a recurrence until they are finally planted. Some of the fibrous roots will perhaps in such cases be lost, but this is the best remedy to adopt, in conjunction with as little delay as possible in planting. The top growth of young Roses is generally vigorous; this should be partially reduced at once, as in the case of the older plants. One further caution is needful in purchasing Roses that are already taken out of the ground for sale: it is that of looking closely to see if there is any tendency of shrivelling apparent in the shoots; the bark will give indications of this if they have been long out of the ground; such plants should be avoided, their vitality having been considerably weakened.

The position which the Roses occupy will have some influence upon their future well-being, and should be duly considered in proper time. One of the chief drawbacks to Rose culture is shade, especially if from the near proximity of trees, and should these be of a large growth the case will be all the more aggravated. Not only will the shade be detrimental in such a case, but the soil also will be permeated with the roots of the trees to a great extent, thus depriving the Roses of their necessary nourishment; in fact, robbing them to a serious degree, for the more the ground is enriched for the Roses themselves, the more will the roots of the trees seek out the same. Insects, too, are more troublesome when trees are near or overhanging, the beneficial effects of showers of rain being in a measure averted. A north aspect, even if shaded by a building, is to be preferred to planting near to trees; some kinds will do in such a position fairly well, but generally have a tendency to grow away rather too freely, producing a woody growth at the expense of floriferousness, not ripening so well either in the autumn. The best positions for successful Rose culture are either towards the south or west; protection from the east is desirable, if possible; when much exposed from that quarter, there is a tendency to more severe attacks of mildew, and that, too, earlier in the season than otherwise, when easterly winds are prevalent. The southern aspect is to be preferred for Tea-scented kinds, with ample protection from the north and east; these do well when planted under the friendly protection of a wall or the house; shelter from cold blasts and a rather drier soil will keep the majority of the best kinds safely through the winter months.

The following are some of the best sorts of Tea-scented and Noisette Roses in cultivation. The list includes nearly six dozen of the best

Roses that can be grown for general utility. Others might be named; but for all practical purposes, unless they are made a *spécialité*, this list will suffice. As a guide, however, to those who may require a less number, we have appended an asterisk (*) to eighteen of the most reliable and useful, alike hardy and free flowering, as well as being calculated to plant in suburban gardens with good prospect of success. Near the sea-coast the tea-scented kinds may be planted with more satisfactory results, comparatively speaking, than the hybrid perpetuals. They should, however, be grown as dwarfs in preference to standards, the latter being more exposed to the high winds that blow at times.

As climbers, Gloire de Dijon,* a well-known old kind; Madame Berard, rather stronger in growth than the former; Bouquet d'Or, deep salmon-yellow; Madame Trifle, lemon colour; Belle Lyonnaise,* very large and double; Céline Forestier, sulphur-yellow, very fine in a warm corner; Lamarque, pure white, a splendid climber for a south wall; Wm. Allen Richardson, orange-buff, flowers best after being planted a few years; Maréchal Niel, well known, requires more protection than most kinds—in a warm spot will succeed as a standard, but is safer against a wall, where it can ramble away freely. The following are better grown as dwarfs, or in some few cases as standards: viz., Princess Beatrice, coppery yellow; Niphetos, white; Souvenir d'Elise Vardon, white, tinted rose; Hon. Edith Giffard, white, slightly tinted; Francisca Krüger, copper-shaded yellow; Mons. Furtadot, bright sulphur-yellow; Souvenir d'un Ami, bright pink, very free flowering; Comtesse de Nadaillac, bright flesh colour, very fine; Princess of Wales, rosy yellow; Catherine Mermet, flesh-coloured, one of the best; The Bride, white, an American kind; Madame Lambard,* bright rose, very free; Madame Thérèse Levet, deep rosy crimson; Sunset, saffron colour; Madame Falcot,* deep apricot, beautiful in the bud; Marie Van Houtte,* yellowish-white; Perle des Jardins, bright straw-colour; Grace Darling,* white, shaded with rose; Devoniensis, white, with yellow tint; Homère, rosy colour; Madame Hoste, yellowish-white, very free; Etoile de Lyon, one of the best pale yellows. The following belong to the Hybrid Perpetual Class, and are selected as being some of the very best for both summer and autumn blooming: viz., Abel Carriere, rich maroon; Abel Grand, silvery rose; Alfred Colomb,* carmine red; Annie Wood, bright red; Baroness de Rothschild, rosy pink; Boule de Neige, pure white; Camille Bernardin,* light crimson; Charles Darwin, rich crimson; Charles Lefebvre,* bright red; Dr. Andry, fine form; Duke of Edinburgh,* rich vermilion; Edouard Morren, deep rose; General Jaquie-

minot,* brilliant red; Glory of Cheshunt, rich crimson; John Hopper, rosy crimson; Jules Finger, soft peach; La France,* silvery pink, very fine, one of the very best; Madame Alice Durcan, clear rose; Madame Eugene Verdier, silvery rose; Madame Victor Verdier, vivid carmine; Marie Baumann,* light red; Marquis de Castellane, bright rose; Maurice Bernardin,* rich vermilion; Paul Neron, deep rose, enormous size; Prince Camille de Rohan, very dark maroon; Sénateur Vaise, fine showy red, very free; Sultan of Zanzibar, one of the darkest; Ulrich Brunner,* cherry crimson; Anna Alexieff, rosy pink; Lord Clyde,* rich scarlet, one of the best garden roses. The three following kinds are Bourbon Roses, and excellent autumn flowering varieties: Madame Isaac Periere,* light carmine, very large; Reine Victoria, bright pink; and Souvenir de Malmaison,* clear fresh colour, with very strong constitution, one of the best old Roses grown. Charles Lawson is a very fine Rose for early summer blooming, but it does not flower in the autumn; when there is room to spare, it should be grown, as it makes a fine show when in flower if trained over arches or in any way where its strong shoots can be partially tied down every year in the spring, before growth commences.

Those Roses planted in previous years that are still in good health should have the extra strong shoots shortened back about one-third, unless they are climbing varieties; these latter should, however, be secured, so as to be safe against a heavy fall of snow later on. The ground between the bushes should be kept clean, and the soil lightly forked over, removing at the same time any suckers that are emanating from the stock. The ties which are still bound around the newly-budded stocks should also be released, or taken away altogether if looking extra well.

Removal of Shrubs and Trees, &c.—

Where there is much requiring to be done in this direction, it is most desirable to see to it as early in October as possible, more particularly so in the case of extra large plants which may have outgrown their more convenient limits, and with regard to which it is not a good plan at times to adopt a severe course of pruning. Aucubas are an instance of this: if pruned severely hard, they look lean and bare for a long time; whereas if carefully removed, they will continue to grow away in good form—somewhat weaker, of course, through the partial check given them; but this in most cases will be rather an advantage than otherwise. This is a shrub that bears removal exceedingly well, through making so many roots near at home, thus holding the soil well together. In the case of very large and fine plants, which are

almost too heavy to be desirable to move to any distance, we adopt a plan ourselves of overcoming the difficulty for a few years to come. This is done by removing the soil to a good depth at the back of the plant, according to its size and the convenience—from 18 inches to 2 feet being none too much. The bottom is then broken up, so as to make it better for the roots afterwards, and the soil hollowed out from under the plant, so that it may eventually be inclined backwards, when the roots and soil are cut away at the front. In this way the work can be done with comparative ease; and the plant, if necessary, may be moved one, two, or three feet, to suit the case, and that without lifting it bodily. This is easily effected by means of a stout piece of wood to act as a lever, first on one side and then on the other. One often meets with *Aucubas* that would be all the better for being thus treated. When first planted, they are generally dwarf plants; but if not disturbed, the time will come when they will outgrow, in many cases, the plants behind them, or overhang the pathway in front to an inconvenient extent. After being moved backwards, room will be provided in front for a few flowering plants of dwarf growth, for it is not necessary to plant more shrubs in front of *Aucubas* in such positions.

Laurels may be treated in a similar way; but they are not nearly so often planted towards the front margin of a shrubbery. The Laurel does not move so kindly as the *Aucuba*, but assistance may be given by shortening back the growth of the past summer half-way; this will give less strain to the roots. The Yew and Box both move very well when of fair size. Plants that are not more than 5 feet or 6 feet high, and have not been stunted in growth or clipped into formal shapes, may be safely depended upon as a rule.

There are a few shrubs that do not re-plant at all well. With these it is best to arrange matters, if possible, by removing others around them, to give more room, or treat them to a rather severe pruning when too large. The *Magnolias* belong to this class, the *Hollies* also (in the autumn season), the *Arbutus* or Strawberry-tree, the *Berberis*, the *Daphne*, and the *Laurustinus*. Do not attempt to move any of these unless it is an urgent case; and then the risk must be run, taking every care to preserve as much of the roots and soil as it is possible to do under the circumstances.

In preparing plants for removal, it is a bad plan to commence digging away the soil and disturbing the roots near to the stem. The first start should be made a good distance away—say, 18 inches or 2 feet—from the stem; this will give a ball of roots large enough in nearly every case, when worked out in a circular manner. After this has

been done to a good depth, so as to get below the chief part of the roots and underneath them, some of the soil should be carefully worked off with a digging-fork, in order to reduce the bulk and weight of soil, but still preserving the roots intact. In this manner sufficient should be taken away, so that the shrub may be afterwards lifted by the strength at command, without its being so heavy as to cause inconvenience by reason of its weight. The hole for the plant to be placed into afterwards should be quite as large as that from which it has been taken, no allowance being made for the reduction in the size of the ball. The roots should all be carefully preserved, and laid out upon the soil as it is being replaced, not merely being left to their chance, and probably forced in a mass close to the original ball as removed. Arrangement should also be made, by making the fresh hole a few inches deeper, for the ball to be covered over the surface with a fair depth of fresh soil: this will encourage fresh roots to push forth, and also keep the plant from suffering during dry weather another season. When the removal has been completed, a good watering should be given, as previously advised in other removals.

When a plant or shrub is moved from where it has stood for some years previously, take the precaution not to place another of that particular family in the same soil, unless it is broken up deeply, and manured if poor. The reason for this is the fact that one family of plants will find sufficient nutriment in the soil for their well-being when following those of another class; whereas if the one is repeated, the growth is weakened for want of that plant-food necessary to its healthy development: starvation, therefore, is the result.

With deciduous trees and shrubs so much trouble in removal is not experienced as with evergreens, and it may often be deferred with good management for several years. This latter advantage is gained chiefly by adopting a proper course of pruning, or foreshortening the strongest growths when exceeding their limits, and by thinning out the weakly wood from time to time. In recommending this, we do not by any means imply that a methodical plan of pruning should be adopted, or that the shrubs themselves should be cut in a formal manner. The kind of shrub to be treated must also be considered, so that one does not deprive himself of the pleasure of a crop of flowers the following season to any serious extent. Some shrubs flower only on the terminals, such as the *Lilacs*, for an instance; if these are cut away now, the crop of flower will be reduced when any severe process is resorted to. Others flower, more or less, upon the greater part of the length of wood made during the previous season, such as the *Syringa*, or Mock Orange. In this case the wood

may be partially shortened; but in neither case should repeated prunings be persistently followed every season, but every few years an extra pruning be given instead.

There are a few shrubs, useful in their way, but which, if allowed too much freedom, are disposed to become a nuisance rather than otherwise. The Snowberry is an instance of this; so also is the common Privet, both of which will, if allowed to grow away freely, take up a large amount of useful ground. These, and any others not of any great value, should be well cut back each year, in the autumn, when the utmost has to be made out of the space at disposal.

The following are capital varieties of evergreens for gardens of limited size, and where space is an object to be first considered, viz.:—*Aralia Sieboldi*, useful as a specimen to stand by itself; *Arbutus unedo*, bears strawberry-like fruit in the autumn; *Aucuba japonica*, the well-known kind; *A. japonica ovata*, the male form; *A. japonica viridis*, in two sorts (male and female). The two latter sorts have green leaves, and are of dwarfer habit than the older kinds. One plant of the male varieties is quite sufficient for most gardens, and will be the means of fertilising quite enough of the female flowers to produce a plentiful crop of berries, which are extremely showy in the spring-time following. *Berberis Darwinii* is a beautiful plant when in flower, the foliage being handsome at all times. The varieties of the Box-tree are very hardy. *Buxus arborescens* (the Tree Box) is one of the strongest growers, but the dwarfer kinds and variegated varieties are all good and reliable; they thrive well under the shade of trees. The Common Laurel is a well-known garden evergreen; there is, however, a variety of it that is generally preferred to the type: this is called the Colchic Laurel. The Portugal Laurel is to be recommended for small gardens in preference to the larger kind first named; but of the Portugal even there is a still smaller form, called the "myrtle-leaved" variety. This latter is a very compact-growing sort. The Daphnes are well suited to shaded spots, and are very tenacious of life; the best are *Daphne eneorum* and *D. laureola*. The hardy Ericas or Heaths are excellent for growing in front of Rhododendron beds in the country, but their culture had better not be attempted near to towns of large size. The *Euonymus japonica* and its variegated forms are all seen to best advantage near the sea-coast; the type will, however, thrive very well under ordinary cultivation in suburban localities. *Euonymus radicans* is a dwarf-growing kind, very pretty for rockwork edgings, and is perfectly hardy; so also is the variegated variety of the same. Ivies and Hollies have been given previously, and

commented upon. The Sweet Bay (*Laurus nobilis*) should be grown; it does best in a warm position. The Evergreen Privets are useful for filling up where cheap plants are wanted in quantity. *Ligustrum japonicum* is the best for general uses. *Mahonia aquifolia*, also known as *Berberis aquifolium*, is a handsome evergreen, whether in flower or not; its foliage is most useful for cutting to arrange with large-sized flowers. The Osmanthus, in several kinds, are plants of holly-like habit, but dwarfer; they are of Japanese origin. The Phyllyrea are compact, slow-growing shrubs, and do well in poor and shaded spots. The Evergreen Oaks are well known as ornamental trees of hardy constitution; the "Cork Tree" belongs to this family.

Rhododendrons are well known as fine evergreen plants, but should not be too much relied upon within the radius of fog and smoke in respect to selecting the best varieties for the purpose. *R. ponticum* is well known as being the best and hardiest of any, and should be selected for poor soils, shaded spots, and suburban gardens. *R. Everestianum*, when it can be had in quantity and as cheaply as the first named, will, we think, even supersede it; it is more robust in constitution, with handsome foliage and flowers. For country gardens the following Rhododendrons are a good selection in their respective colours:—*Blandyanum*, dark crimson; *Congestum roseum*, light rose; *Formosum elegans*, pink; Frederick Waterer, intense fiery crimson; James Bateman, clear rosy scarlet; Lady A. de Trafford, cream colour; Lady Dorothy Neville, fine purple; Lady Eleanor Cathcart, rose; Lady Lopes, delicate rose, with dark spots; Lady Rolle, blush white; Minnie, white, with chocolate spots; Mrs. John Clutton, one of the finest whites; Mrs. John Waterer, rosy crimson; Sydney Herbert, light crimson; William Ewart Gladstone, rich crimson, immense truss; Vervaekeanum, double lilac; Mont Blanc, white, dwarf habit; Lord John Russell, pale rose. *Andromeda floribunda*, a dwarf plant, does well with the Rhododendrons in the country.

Ruscus aculeatus (the Butcher's Broom) is very hardy, and makes an excellent plant as a stop-gap where hardly anything else will grow. For a sunny spot upon poorish soil the Gorse or Furze should be planted. *Veronica Andersonii*, *V. Traversi*, and *V. salicifolia* are three useful and free flowering plants for country gardens in warm localities and near the seaside. The Laurustinus (*Viburnum tinus*) should be grown wherever a little protection from the coldest quarters can be afforded; its flowers are most useful for cutting early in the spring. The Yucca, or Adam's Needle, in several varieties, is one of the best plants to stand individually as a single specimen. They are equally suited to town or

country gardens, and not at all particular as to the quality of the soil. Some advise, and also practise, tying the leaves up closely together for the winter months, as a protection. We do not recommend it, believing the plants invariably keep better without it. When adopted, it certainly has a tendency to weaken the central portion of hitherto undveloped leaves, which is not in any way desirable. *Yucca gloriosa* is one of the best-known kinds, and is of noble outline, forming a grand mass in a few years from planting. *Yucca recurva* has pendulous foliage, and makes a graceful plant for vases in the winter season.

Of deciduous trees and shrubs, the following are a good selection from which choice may be made, viz.:—The hardy Acacias or Robinias make fine plants, with graceful foliage and beautiful flowers. *A. Bessoniana* and *A. inermis* are two of the best to plant; the latter is the kind generally grown as standards. The Japanese Maples, or Acers, are beautiful additions to their family; they are most attractive, with their finely-cut foliage of diversified colours, from pale green to purplish-crimson. They should not be planted in a very cold or exposed situation; as if so they will not succeed well. The Negundo, or Variegated Acer, is a Maple; its silvery variegated foliage looks well throughout the season. As a contrast to the foregoing, the dark, bronzy-purple leaves of *Prunus Pissardi* produce a splendid effect, and is equally free in growth. The Copper Filbert and Purple or Copper-coloured Beeches also look well, and are seen to excellent advantage when planted near to the Negundo or to the yellow Laburnums. The Horse-Chestnuts should only be planted where there is a fair amount of room; but the Mountain Ash can be accommodated within moderate dimensions, and is a beautiful sight in the autumn, when loaded with its highly-coloured berries. The Scarlet Oak (*Quercus coccinea*) is worthy of a place; being of rather upright growth, it does not take so much room as many things; its foliage in the autumn assumes a lovely tint: hence its name. *Rhus Cotinus* (the Venetian Sumach) thrives well in the country, and also presents a beautiful appearance in the autumn; it does not require a great amount of room. The Ribes, or Flowering Currants, should be included; flowering in April and May, they are valuable. *Ribes aureum* and *R. sanguineum* are two of the best.

For rockwork, the double-flowering Brambles are well worthy of a place, presenting a beautiful appearance whilst in flower. *Rubus fruticosus*, *albo-pleno* and *roseo-pleno*, are two good kinds. The Salisburia, or Maiden-hair Tree, is one of slow growth, but with handsome foliage; it resembles the Maiden-hair Fern in its foliage, but is larger in its parts. The shrubby Spiræas are fine flowering

plants, growing freely in nearly any kind of soil. *S. ariæfolia*, *S. confusa*, and *S. Lindleyana* are three fine kinds; the latter requires the most room. The Lilacs hardly need to be recommended, being so well known. Charles X., a fine lilac colour, and the common white, are two of the best; *purpurea flore pleno* is a good lasting double kind. The Mock Orange should have room provided for it. The ordinary white kind and its double form are two of the best; there is also one with larger flowers and stronger growth. Neither the Lime nor the Elm are recommended for the average run of gardens, especially the latter, which so much impoverishes the soil. The Guelder Rose, with its globular snowball-like heads, is a free growing plant in nearly any soil. *Weigela rosea* flowers most profusely in long racemes, and makes a fine show. The Hydrangeas will grow and flower freely with but little attention; they prefer a rather sunny spot. When the common kind changes the colour of its flowers, as it does in some soils, from pink to a beautiful shade of blue, it is a lovely sight. *H. paniculata grandiflora* is a very fine newer kind from Japan. The double-blossomed crimson and white varieties of the Thorn should have consideration; they will grow where many things fail, and do not object to an exposed situation. Standards of these are always to be preferred. The Double-flowering Cherry (*Cerasus avium flore pleno*), and the Semi-double Crabs (*Pyrus spectabilis rosea flore pleno* is the best), are both valuable early-blooming shrubs, which, like the Thorns, hardly ever fail to yield a crop of flower. The double *Deutzia crenata* has rose-tinted flowers, and blooms well in a small state, making a good show. *Cercis siliquastrum*, also known as the Judas Tree, flowers most freely when a warm spot can be given it; it has pea-like blossoms of a rosy lilac colour, and are produced upon both the old and young wood. It is not a common plant by any means, but none the less worthy of cultivation. This list of both evergreen shrubs and deciduous plants could be further extended, but those given have been proved to be good and reliable of their kinds. A list of Conifers, or cone-bearing trees, will be included in the next issue.

Chrysanthemums.—Last month's advice will in many respects still hold good; no more disbudding should, of course, be attempted now, and all of the stock should be housed as soon as possible in October. If it is not convenient for a week or two to bring all the plants under cover, those that are the forwardest should at least be taken in as soon as they begin to show colour, for fear of a frost ensuing, which will often be the case with but little warning. The house should at first be well ventilated, so that the plants do not feel the change from one atmosphere to

another; and if the weather should be damper than usual, a little fire heat will help to keep down and dispel the damp, which would otherwise injure the forwardest flowers. The watering should be seen to early in the day, and any decaying foliage also removed at the same time. If any of the water given to the plants does not pass away freely, the drainage should be seen to, as the hole at the bottom of the pot may be possibly stopped up whilst still out of doors. Liquid or artificial manure may still be given them until the flowers are about half expanded; after that stage has been reached, clear water will be better, and any superfluity of this after watering should be dried up at once with a piece of flannel or a mop.

The Vinery.—Where Grapes are still hanging upon the vines, the atmosphere should be kept as dry as possible, ventilation being given on all favourable occasions, and the house kept closed at other times, and always so now at night-time. A close watch must be kept now, even more so than pre-

viously, for any symptoms of decaying berries, and these carefully removed. That part of the wood that is still green, not having assumed a nutty-brown colour, should now be all cut away, to admit more light and air amongst that remaining. This should not be all done at once, but gradually, a little at the time; if that along the top is seen to first, it will be better for the ventilation. In doing this work, be careful not to break off any of the large leaves; these are an assistance yet to the functions of the vine rather than otherwise.

Greenhouse.—Care in respect to watering, the removal of all dead and fading leaves, and plenty of ventilation on fine days, are the chief points to observe now. Fire heat will only be required in very damp weather, no frost during October being sufficiently severe to do any harm. All plants that will take harm through frost, and are still out of doors, should be got under protection as soon as possible, all bedding-plants being, of course, included; these should be kept as close to the glass as convenient.

CAREERS FOR GIRLS.—I.

THE idea of careers for girls is quite of modern origin. Half a century ago it used to be taken for granted that the one career open to a girl was that of wife, mother, and mistress of a household; and individuals who failed to achieve what was supposed to be women's vocation by marriage, were looked down upon and pitied by their neighbours and acquaintances. Moreover, the women who worked for a living were regarded as anomalies; and even if they attained success, they were believed to have simply made the best of a misfortune, rather than to have merited approval.

In the present period of our history, however, this theory of women's work has been rudely shaken, and there is every prospect that before very long it will have disappeared altogether. Owing to various causes, into which it is needless here to enter, at the present day a very large number of girls have no opportunity of marrying, should they desire it. As a consequence, some mode of earning a subsistence has become a necessity to many such, and women now take upon themselves a large share of the work of the world. As a proof of this, it may be mentioned that in the census taken in 1831, when Queen Victoria commenced her reign, no occupation whatever was stated as appertaining to women excepting that of domestic service. In the census of 1881 the number of occupations followed by women was 330;

while of the different classifications of occupation which engaged the community as a whole, there were only seventy to which women had not been introduced. Or to state the case in another way, in words taken from an article published in the *Edinburgh Review* of April, 1859, and which appears on the title-page of the reports issued by the Society for Promoting the Employment of Women: "The tale is plain enough. So far from our countrywomen being all maintained as a matter of course by us, the 'bread winners,' three millions out of six of adult Englishwomen work for subsistence, and two out of three in independence. With this new condition of affairs new duties and new views must be accepted."

Nor is this all. Not only is it quite usual now for women to make their own living, but the position of women workers is not now what it once was. Now a woman or girl who can make her own living, and support herself by her own industry, is honoured, and is understood to have earned the respect of her friends; while parents are beginning to be anxious that their girls, as much as boys, should have a definite aim in life apart from marriage.

Whether or not the change which has taken place in this direction is advantageous or otherwise is a matter of opinion. That it has been accomplished, however, is an undoubted fact; and the duty of

parents and guardians to give girls as well as boys a career is universally acknowledged. This duty has been forcibly brought home to parents by the misery and pitiable condition of thousands of girls who have not been put to work. Some years ago a book, entitled "The Woman Question in Europe," by Theodore Stanton, was published, in which attention was called to the fact that there were amongst us two classes of women whose condition was most deplorable: the one class included the working women who tried to earn a living by needlework at starvation wages; the other the daughters of professional men, who, having lost by death or misfortune their natural supporters, had become destitute, and did not know where to turn for the means of subsistence. Thomas Hood constituted himself the advocate of the seamstresses, and in his "Song of the Shirt" endeavoured to rouse public sympathy on their behalf. He succeeded to this extent: that he made parents realise that a woman was not fitted to fight the battle of life simply because she was able to sew. The advocates of the destitute gentlewomen were much more numerous. Kind-hearted people arose on all sides to suggest remedies for their distress, and charitable societies were established to assist them. Some of these societies are still doing excellent work, although their members have discovered that no more difficult task was ever set before an association than that of endeavouring to help people who are unable to help themselves.

Perhaps, however, the most eloquent advocate of the "destitute gentlewoman" has been the well-known novelist Mr. Walter Besant. In an article entitled "The Endowment of Daughters," published in one of the reviews, this gentleman declares it to be a shame that a lady should ever have to stand in the labour market for hire, and maintains that it is the duty of all parents to endow their daughters by setting aside from the date of their birth a certain sum sufficient to bring them an annuity as long as they live. Mr. Besant declared that in France no girl born of respectable parents is unprovided with a dowry. There is in that country no family, however poor, which does not strive and save in order to find their daughters some kind of *dot*. In Germany, on the other hand, there are companies who manage the business. On the birth of a girl, the father inscribes her name on the books of the company, and pays a certain small sum every year on her account. At the age of twenty-five, if she is still unmarried, she has the right of living rent free in two small rooms, and receives a small annuity. If she marries, she has nothing. But in giving the advice that English parents should follow this example, Mr. Besant forgot that in thousands of families the endowment which he recommended would be

impossible. When people have to contrive and economise to the extent of their power in order to make both ends meet, it is not of much avail to advise them to "pay a certain small sum every year" for twenty-five years in order to obtain an annuity.

Some years ago a celebrated writer on women's subjects—Miss Becker—caused much annoyance in certain quarters by speaking of marriage as a profession, or means of making a livelihood. Her remark was pronounced indelicate and improper, but there was no doubt it contained a good deal of truth. For a great many women marriage is a profession: it is simply a way of making a home and of finding an employment. When a girl has no suitable means of subsistence, to be invited to preside over a household is a way out of a difficulty; and it presents a temptation to a girl to marry, even though the individual who makes the proposal is uncongenial as a companion, and is not the object of affection. Thus marriage becomes degraded. Yet even as a profession, it has already been pointed out that marriage for girls is less probable now than formerly. In the Jubilee number of the "Englishwoman's Year-Book," written by Miss Louisa Hubbard, a sort of summary is given of the position of women as presented during the last fifty years. The facts are drawn from statistics, and with regard to marriage this is what they amount to:—

"During the last fifty years the age at which women marry has greatly altered. Although village girls still marry, as our grandmothers did, about the age of nineteen or twenty, town and factory girls marry at sixteen or seventeen, or even earlier, to their own great detriment and to the deterioration of the race. In what are known as the higher ranks of life, however, exactly the reverse is experienced. Marriage in these ranks of life is postponed to a much later period than of old; and although at the beginning of the reign a woman of twenty-five was looked upon as a hopeless old maid, women are now called 'girls' till they are thirty, or even older, and marriages at thirty-five or forty are perhaps almost as frequent as those in the twenties."

Considerations like these having been impressed again and again upon the minds of parents, it is not wonderful that they have at length been convinced of the wisdom of giving girls, as well as boys, "a career." They have become convinced that the surest way of helping "decayed gentlewomen" is to prevent any addition to their ranks, and to give girls an outlet for their industry whereby they may support themselves. That this new attitude has been assumed by parents is a subject for congratulation, and it is a cause for sincere rejoicing that the employments now open to women are so numerous.

At the same time, however, it must be urged that

if a girl is expected to make her own living, she should at least be put in the best way of doing so; that her career should be judiciously chosen for her, and she should be properly trained for it, as boys are trained. It is a pity at the present time that many parents make the mistake of saying, "I will give my daughters a good education, then they will be able to make their own way." To give a girl a good education without any other special training is almost to decree that she shall eventually become a teacher. Yet there is no industry in which women engage that is more crowded than this. Teaching is without question a very profitable and suitable occupation for women who have a faculty for the work; and its importance is proved by the fact that one-half of the elementary teachers of Great Britain are women. At the same time, there are a great many women who are not at all fitted for it; they have not a gift for teaching, and they will never succeed in it. For these women to press into the ranks of teachers is to lower the rate of wages for the rest.

In these days the choice of employment for women is not nearly as limited as formerly, and a girl is much more likely to succeed if she takes up work that is congenial to her. These facts being granted, it will perhaps assist parents and daughters to come to a wise decision in this matter if a summary is here given of the spheres now most readily available for women, with some general directions for entering them. An attempt will therefore be made to supply such a summary.

Teaching.—Of all the remunerative industries in which women are engaged, this is the one which is more important than any other, on account of the large number of those who undertake it. For the higher branches of the profession, it is necessary and indispensable that a woman should have gained "higher education" and obtained a degree. Information concerning the means for obtaining these advantages has been already given. A few years ago the possession of degrees by women was so novel that the industrious owners of these honours were able at once to secure an advantageous engagement as teachers. Now, however, degrees are becoming quite common amongst women; every year adds to the list of women who own them, and their pecuniary value has decreased. In themselves they no longer command the high price in the educational market that they formerly did. Nevertheless, they are considered necessary, and it is quite hopeless for a woman to try to gain any of the highest posts as a teacher without them.

Women who have not the means or the opportunity of studying for degrees, and so qualifying for the prizes of the teaching profession, may, if they can

gain a good education, find very satisfactory employment as elementary teachers in Board Schools, National Schools, British Schools, and Private Schools. Girls are usually prepared for the work of teaching by attending High Schools, and by going through a Training College. Training Colleges for Teachers are established in various towns; and the terms vary with the position and standing of the institution. Perhaps the most celebrated of these Colleges are Whiteland's College, Chelsea, London, and the Cambridge Training College for Women Teachers.

Many young women, however, instead of going to a training college, find it more convenient to gain their training by becoming pupil-teachers at a Board School. For this they must pass an examination for admission at the age of fourteen, and then serve as probationers without salary for one month. During the second month of training they may earn 4s. a week. They will have to serve an apprenticeship lasting four years, but during the whole of that period they will be in receipt of a small salary, the amount increasing gradually by 2s. per annum until it reaches 10s. a week. At the end of each year they will have to pass an examination, and two years of the apprenticeship will have to be passed in a training college, at an expense, including board, lodging, and instruction, of about £25 per annum. The work of a pupil-teacher is hard, and only the strong and vigorous are able to stand it. Those who go through the entire training and obtain all the certificates, are qualified to apply for a situation as head-mistress; those who from any cause are compelled to give up training after having obtained one or two yearly certificates, only become assistant teachers.

The remuneration awarded to female teachers varies according to their position, and the means of those who employ them. Head-mistresses of High Schools and Collegiate Schools, where capitation fees are paid, obtain very handsome salaries, amounting, it is said, in some cases to £1,000 or £1,200 per annum. Nursery Governesses in private families will sometimes give their services for £12 a year, and they have even been known to engage in the work of tuition for board and lodging, without pay. These low payments are, however, it is to be hoped, very exceptional, and they could only be offered to individuals of inferior capacity. As a rule, the salary of a private governess ranges from £30 to £150 per annum; the salary of an assistant mistress in a public school ranges from £70 to £150 per annum; and the salary of a head-mistress ranges from £150 to £700 a year. In India and the Colonies also there is frequent demand for teachers who have good references, who have gone through a complete system of training, and "hold a parch-

ment," as it is termed, from the Education Department.

The work of a fully-qualified and well-placed female teacher is very hard, but it is very agreeable and satisfactory. Teachers who are conscious of being equal to their position may exercise a powerful influence for good, and do valuable service in their day and generation. It is probable that there are no more useful and valuable members of the community than capable and kind-hearted female teachers.

Teachers in Special Subjects.—Every year the number of women who desire to earn their living by teaching increases, and, as already stated, the competition threatens to reduce the rate of remuneration. There are, however, three departments of the profession with regard to which authorities tell us that the demand for teachers is greater than the supply. These are the Kindergarten, the Gymnastic department, and the department of teaching Deaf Mutes. For all, special and thorough training is needed; which training is, in the first instance, rather expensive, involving an outlay both of time and money. The full qualification is, however, very valuable, and although occasionally women profess to be qualified who are not so, the holders of true certificates rarely fail to find satisfactory employment. Also there is every expectation that these openings for women will be extended.

Kindergarten Teachers.—Girls intending to become Kindergarten teachers should obtain the certificates which are given after examination by the Joint Examination Board of the National Froebel Union. These are of two sorts—the Elementary Certificate, and the Higher Certificate. The Elementary Certificate is intended primarily for assistant mistresses in Kindergartens, and for Kindergarten teachers in elementary schools and private families. The Higher Certificate should be aimed at by all who wish to undertake the full charge of a Kindergarten. Before a student can be admitted to the examination for the Elementary Certificate, she must either have passed some recognised public examination in English subjects, such as the first or second class College of Preceptors or the University Local Examination; or she must pass a preliminary examination, and she must be above the age of seventeen. She will also be expected to show acquaintance with the principles and practice of Froebel's method of education. This acquaintance will have to be obtained at a Kindergarten Training College, the course of which extends over two years, the fees amounting to about £40. To the examination for the Higher Certificate, no

candidate will be admitted under the age of eighteen. A syllabus of the examination of the Joint Board of the National Froebel Union can be obtained, price 2d., from the Secretary, 17, Buckingham Street, London, W.C.

Fully-qualified Kindergarten teachers seldom fail to obtain employment. The salaries of teachers begin at £60, and rise to £100 or more. The average rate of remuneration is, however, £80.

Gymnastic Teachers.—Girls who are not fond of close application to books, and who, as a consequence, are unable to take degrees, will often succeed well as gymnastic teachers. Gymnasiums are now attached to many High Schools, and the Swedish system of drill is now taught under the London School Board; consequently, it is likely that there will be an increasing demand for professional superintendents of physical education. To qualify for this position, it is necessary that a girl should be trained under a competent teacher. The best-known professionals at the present time are Madame Bergman Oeterberg, Hampstead Physical Training College, London, N.W., and Miss Chreiman, Physical Training College, Portman Rooms, 58, Baker Street, London. The first-named lady is the representative of Ling's Swedish system of drill, and Miss Chreiman's system is understood to be directed to the harmonious development and general culture of the body. At both colleges students are trained as teachers; the course extends over two years, and the fees amount to about £40. Information can, however, be obtained up to date on application to the principals of the colleges. It is stated that all the girls who have been trained in these colleges have done well, and the demand for superintendents of physical exercise continues.

Teachers of Deaf Mutes, when duly qualified, can generally obtain employment without difficulty, and the demand for these teachers is likely to increase, because classes have been established under the School Board for children who are unfortunate in this way. The period of training extends over two years, and costs about £50 a year. Certificated teachers can generally obtain good positions, with a salary of from £50 to £100 per annum. The work is painful, but very interesting. Information concerning training can be obtained from the Training College for Teachers of the Deaf, Castle Bar Hill, Ealing.

Slöjd Teachers.—A great many authorities in educational matters maintain that one of the most remunerative employments which girls can follow in the immediate future will be that of teachers of

the Slöjd system; indeed, so high are the expectations formed concerning it, that Slöjd has been called "the fad of the future." It is not, however, a fad. It is a very useful means of supplementing the Kindergarten training by giving children more manual skill, and mastery over a few tools and a few substances. The Slöjd work is very simple and exceedingly interesting, and it is also very carefully progressive. Its object is to train young people to use their hands as well as their heads. Each pupil goes through a numbered list of articles in wood, shaping each one entirely, and doing all the work from start to finish under the teacher's superintendence, but alone. The articles produced are common articles used in all Swedish households; spoons and boxes, stools, butter-bowls, and so on, and the original promoters of Slöjd had to visit Sweden in order to learn the system. It is, however, now to be learnt in England. Information regarding instruction in the original Swedish Slöjd system can be obtained from the honorary secretary of the Slöjd Association, 17, Connaught Road, Harlesden, London. There is also the Home Sloyd Union, which has Anglicised the name, and endeavoured to modify the system, so as to replace purely Swedish articles by others of more use and interest in this country. It is justly thought, that however admirable the system may be in principle, details of workmanship that are purely Swedish cannot be of the same value to another nation; and an endeavour has therefore been made to work out an English system of work on the Swedish idea. For information and instruction in this system application should be made to the principals of the Sloyd Institute, 115, Vassall Road, London, S.W.

Another means of supplementing the Kindergarten training is the Hand-and-Eye Training System. This system was the invention of a School Board Inspector, Mr. Ricks; and it has been adopted in many schools, both in London and in the country. Those who have tried it declare that it is superior to Slöjd, because it exercises the child's originating faculties, whereas Slöjd exercises the imitative faculties only. This system does not aim at training a child to use the hand only, nor does it train the hand for the sake of the hand, or for the sake of the productive skill which the training gives. It is a training of the hand for the purpose of securing at the same time and primarily the training of the mind through the senses of touch and perception. It is surprising to see the readiness with which children as young as seven or eight years enter into the spirit of this training, and find delight in the exercise of the constructive faculty, which almost everywhere among children manifests itself when the opportunity is given. It is also a curious result

of experience that girls succeed in parts of this work better than boys. The system is now being taught in many School Board and other schools. Those who wish to acquaint themselves with it may do so by consulting the work on "Hand and Eye Training," by George Ricks, and published by Cassell and Co.

Medicine.—A dreary struggle has had to be gone through before women could obtain a footing in medicine, but now it is generally taken for granted that the position has been won, that women have here entered on a wide field of usefulness, and have secured remunerative employment as lady doctors. Already a number of female physicians are established in several large towns. The women who inaugurated this movement are well known in the medical world, and have a valuable practice; many women are employed in infirmaries and dispensaries, while for qualified medical women who can go to India the demand is greater than the supply.

The prospects for qualified lady doctors seem indeed so promising that an increasing number of girls determine to enter the medical profession every year, in spite of the fact that the preparatory training is so costly that only young people who have means can hope to pay the expenses; that the work required is long and difficult; and that perseverance, courage, and determination of no mean order are essential for all who follow this employment. Nothing seems to deter the women who have once made up their minds to become doctors; they embrace this career full of hope, and in too many instances they are grievously disappointed.

It is necessary that women should know that for them a position of vantage in medicine has not yet been fully won; and that there is but a dreary prospect before the majority of those who enter the medical profession. It is true that there is now very little more difficulty in obtaining medical education for women than there is for men; that medical schools for women are established in the capitals of each of the three kingdoms; that examining boards also are open to them in England, Scotland, and Ireland; and that, having passed the necessary examination, a woman can either obtain a medical degree from a university, or a qualification to practise from the College of Physicians and Surgeons. Up to this point the difficulties in the way of women entering the profession have been overcome. The chief obstacles have, however, to be encountered *when the qualification has been obtained*, and when the woman has taken the diploma which entitles her to enter her name on the Medical Register.

These obstacles are twofold. First, there is the difficulty for a woman to gain experience. Up to the present time it has not been permitted to women.

on the conclusion of their course as medical students, to hold responsible posts on the staff of any of the large general hospitals; and they have therefore had no opportunity of obtaining the skill and self-reliance which are obtained by practising what they have learnt. It is true that within a recent period the New Hospital for Women has been opened, partly for the purpose of supplying this need; also that medical institutions, to the number of half a dozen or so, are now officered wholly or partially by registered women. Yet the number of women who can be put to actual work in these institutions must necessarily be limited, and therefore the students who cannot obtain a place on the staff of these institutions must remain students only; they cannot easily gain experience.

Secondly, there is the difficulty of starting in practice. Medical men as a rule either buy a practice when they are ready for it, or they become assistants to a physician with a good practice, with the view of obtaining after a time a junior partnership; but to women these methods are impossible. They have to build up a practice for themselves, and sometimes it is a long time before they succeed in doing so. To a certain extent men do this also; but those who have done so best know how hard and arduous the task is, even in a rapidly-growing neighbourhood; and women have much more to contend against, there being less popular demand for their services. Women are generally supposed to be specialists for the diseases of women and children; and a certain amount of prejudice has to be conquered before a woman will trust her own health or the health of her children in the hands of one of her own sex, unless the latter has already achieved a reputation. The upshot is that a woman's success in medicine generally depends upon her social position, and upon her having friends who can bring patients to her; while for women who lack these advantages the struggle is long and difficult.

Notwithstanding these facts, it is a subject for congratulation that so many women enter medicine. The medical education does them good; for there is no denying that, whether educated or not, women are the medical practitioners of the community; they administer more drugs than all the doctors in the world, and if they could get to know a little of what they are doing, the community would benefit, and probably human life would be spared. Moreover, as the medical training is so costly, only women of means can secure it; and if such women fail to obtain a practice, they will not starve. Women are so persevering, that in the end they are sure to conquer. Even during this transition period through which they are now passing, registered

medical women have obtained posts in connection with medical dispensaries, and a few Government appointments have been allotted to them. A few women are doing a good business, while a moderate number are making a fair living by filling subordinate medical positions as matrons or attendants in hospitals or lunatic asylums; as *masseuses*, or female rubbers; and as mechanical dentists, their business being not to extract but to prepare teeth. Women who want employment of this kind usually advertise in the medical journals.

The first thing a student who desires to enter the medical profession has to do is to decide what qualification she will aim at obtaining. There are two sorts of qualifications available. First, diplomas granted by the Colleges of Physicians and Surgeons; and second, medical degrees granted by universities. Of these qualifications, the degrees are the more expensive, and they confer the higher professional standing. There are only two universities in this country which grant medical degrees to women; these are the University of London and the Royal University of Ireland. It is generally understood that it takes six years' steady work to prepare for the London degree, and four years for the Irish degree.

There are four schools at which women can study medicine. These are—

1. The *London School of Medicine for Women*, in association with the Royal Free Hospital and the New Hospital for Women. Address Miss Thorne, 30, Handel Street, Brunswick Square, W.C.

2. The *Edinburgh School of Medicine for Women*, in association with the Leith Hospital. Address Miss Black, Surgeon Square, Edinburgh.

3. The *Dublin School*. Address Dr. Jacob, Secretary of Council, Royal College of Surgeons in Ireland.

4. *Queen's College, Belfast*. Application to be made to Dr. Redfern, Dean of the Medical Faculty.

Before the study of medicine can be commenced, it is necessary to pass one of the preliminary examinations in Arts accepted by the General Medical Council, and by the examining body the student has chosen.

The choice of a school is usually determined by considerations of convenience. The curriculum extends over four years. The cost of a medical education varies according to the requirements of the Examining Boards. The fees for the curriculum at the school and hospital, which must be taken, whatever licence, diploma, or degree the student is preparing for, are, at the London School of Medicine, £105 if paid in one sum; or £115 if paid in instalments extending over four years. In the other schools the fees are not quite so much. These fees do not, of course, include the cost of living.

The cost of the qualifications to practise medicine are as follows :—

Licence in Medicine, Surgery, and Midwifery, Apothecaries' Hall, London - - - - -	10	10	0
Licence of College of Physicians and College of Surgeons, Edinburgh; and Faculty of Physicians and Surgeons, Glasgow - - - - -	26	5	0
Diplomas of Conjoint Colleges of Physicians and Surgeons, Ireland, in Medicine, Midwifery, and Surgery - - - - -	42	0	0
Fellowship of R.C.S.I. - - - - -	26	5	0
M.B. and B.S. Degrees of University of London - - - - -	20	0	0
M.D. and M.S. Degrees of University of London - - - - -	10	0	0
M.B. Degree of Royal University of Ireland - - - - -	6	0	0
M.D. and M.Ch. Degree of University of Ireland - - - - -	10	0	0

All fees have to be paid in advance. Full particulars, however, concerning fees, scholarships (a number of which are offered from time to time in connection with the various schools), terms, and other details may be obtained from the authorities. Letters asking for information should always contain a stamped and directed envelope for reply.

In the advice to students given in the prospectus of the London School of Medicine for Women there occurs the following passage :—

"Before a student decides to enter at either of the universities open to women, she should be sure—(1) That circumstances will allow her to spend at least five years in study; (2) that she has had a really good general education, for without this a university course is doubly difficult; (3) that her health will probably stand the strain of severe and prolonged work."

It has been already said that in India the demand for ladies who will go as doctors to women is greater than the supply. To go out as a doctor to India is, however, a costly business. Women who desire to take up this work, however, may occasionally obtain assistance from Lady Dufferin's Fund, or from one of the various charitable societies which offer aids of this sort to women.

Medical Missionaries.—Besides the recognised Medical Schools for women, where a thorough and complete medical education can be obtained, there are religious societies which provide what is called a "two years' course" for women who desire to go out as missionaries in connection with Zenana work. The following are the societies which afford help of this sort :—

1. Society for Promoting Christian Knowledge, Northumberland Avenue, London.
2. The Zenana Bible and Medical Mission, 2, Adelphi Terrace, London, W.C.
3. Edinburgh Ladies' Zenana Committee, St. Oswald's, Edinburgh.

4. Ladies' Society for Female Education in India. Rev. W. Stevenson, Edinburgh.

It should, however, be clearly understood that a "two years' course," though it may train nurses or midwives, does not give an education that enables a woman to qualify as a doctor. Speaking of an education of this sort, Dr. Sophia Jex-Blake, the Dean of the Edinburgh School of Medicine for Women, says :—

"It cannot be too often repeated that it is only in recognised medical schools, preparing for a registrable qualification, that a complete and satisfactory education in medicine can be obtained. The 'two years' courses' that have been instituted in connection with Zenana Missions, or otherwise, may train up nurses or midwives, but they give no education recognised by the General Medical Council, and none that qualifies for examination by any of the Licensing Boards.

"If any young women who have studied in such colleges desire subsequently really to enter the medical profession, they find that their whole previous work counts for nothing, and that they have to begin again at the very beginning, to pass a recognised examination in Arts, and then to start afresh on the four years' curriculum prescribed by the medical authorities, at the end of which alone a registrable qualification may be obtained. It is entirely right for the protection of the public that this should be the case, as four years represents the very minimum of study which can be satisfactory to a conscientious student, or which can possibly fit either men or women properly to discharge the very solemn duties and responsibilities of the medical profession either at home or abroad."

Dispensers, Chemists, and Druggists.—The complete medical training being so costly and difficult, many women prefer to undergo partial training, in order to fit themselves for acting as dispensers of medicine, either in hospitals, for established medical men, or for chemists and druggists. Work of this kind has been found particularly appropriate for women, because it requires a power of delicate manipulation and great accuracy of measurement, and it is not specially laborious. Four or five hospitals and dispensaries and one or two dispensing firms have already permitted women to engage in work of this kind, and it is hoped that the example thus set will be followed.

The training for Chemistry and Pharmacy is the same that has to be gone through by boys. (See a previous article.) It may be commenced as soon as a girl leaves school. The preliminary education should have been such as to enable her to pass the University Local Examinations. The chief require-

ments are a knowledge of English, Latin, and arithmetic. A three years' apprenticeship with a practical chemist is then entered, the expense of which will vary from £50 to £120 a year. The theoretical and practical knowledge acquired during apprenticeship ought to enable a girl to pass the final examinations, and she would then be qualified either to commence business as a chemist and druggist (if she possessed the capital requisite for the venture) or to accept a salaried position for the work.

Women who intend to become dispensers will be interested to know that the Pharmaceutical Society, 17, Bloomsbury Square, W.C., admits women to the lectures of the Society, given daily (fees, £4 4s.), and also to examinations. The South London School of Pharmacy, 325, Kennington Road, admits women to lectures, and also to the laboratory. Fees for one year's training, £15. The Pharmaceutical Society in Ireland is also open to women, and classes in preparation for its matriculation examination are at work at the Queen's Institute, 25, Molesworth Street, Dublin.

Dentistry.—The National Dental Hospital, 149, Great Portland Street, London, and the Edinburgh Dental Hospital, Lauriston Lane, Edinburgh, admit women as students, and already women appear to have gained a footing in this field of work. One or two women have commenced practice as dentists, and they have been specially successful in the manufacture and arrangement of artificial teeth.

Nurses.—That nursing holds an important place amongst the employments of women is evident from the fact that the number of women who at the present time aspire to the title of nurses, and who are at work either in connection with hospitals or private institutions, is not less than fifteen thousand; yet the number of applicants for training increases every year.

The majority of hospitals, both in London and the provinces, train nurses. The regulations observed at different institutions vary somewhat in detail, but it is always possible to obtain a list of the rules and a statement of terms from the registrar, the matron, the secretary, or some other responsible official attached to any special school. Girls, therefore, who intend to become nurses are advised to obtain accurate information from the fountain-head. For the most part, however, it may be stated that there is usually a limit of age observed, and that references of character and certificates of health are almost invariably required. The would-be nurse commences as a probationer, and receives a low salary. At the end of her period of probation she is expected to remain in the service of the institution where she received her training for a number of years. The

average salary during this time is about £12 for the first year, and for women who remain nurses it rarely rises beyond £30 per annum. Trained nurses who become ward sisters, or the chief nurses of wards, receive from £30 to £50; and matrons and lady-superintendents receive from £50 to £150.

In many hospital schools an arrangement is made by which ladies, on payment of a certain sum—usually a guinea a week—can be trained for private nursing or for philanthropic work. These "lady pupils" have certain privileges accorded to them, and their duties are not quite so onerous as are those of the regular nurses. They do not, however, learn as much as the latter; the entrance to a hospital by this side door is not as satisfactory as entrance in the orthodox way. Girls who seriously intend to adopt nursing as a profession will do much better to go through the drill appointed for working nurses. When arranging to do this, they must expect to have to work hard; their hours will be long, their duties responsible and depressing, and their salaries low; they will have a good deal to put up with, and in some hospitals their food will not be very good. Yet as the result of their endurance and patience, they will be much more efficient and capable than if they endeavoured to obtain their training more easily.

It has already been stated that after training nurses are always expected to remain for a certain time in the service of the institution where they received instruction. When the nurse is free and fully qualified, several branches of the profession are open to her. She may either remain in the hospital as a ward or staff nurse, hoping in time to be promoted to the position of sister, or head of the ward, or she may take up district, workhouse, private, or army nursing, either in institutions or families. There is an increasing demand for fully qualified and trained nurses of every description, and a capable nurse of good character is more likely to be too hard-worked than to want employment. For private nurses there are institutions and homes, the managers of which engage nurses, pay them regular wages, and give them board and lodging during the intervals of employment. A few medical men also employ their own nurses, and pay them by the case.

There are so many abuses and hardships connected with nursing as a profession, that it is satisfactory to reflect that within a very recent date two associations have been established for the protection of women thus employed. One of these is the British Nurses' Association, the President of which is the Princess Christian of Schleswig-Holstein; the other, the National Pension Fund for Nurses, the inaugural meeting of which was held at Marlborough House, with the Prince of Wales in the chair. The

first of these societies may be called a Trades Union of Nurses, the second a Benefit Association. The object of the British Nurses' Association is to provide for the legal registration of trained nurses, and thus protect the public from the hundreds of ignorant women who now, without let or hindrance, pretend to act as trained nurses, and by their ignorance cause incalculable suffering and danger to the sick.

The object of the National Pension Fund for Nurses is to afford to nurses a means for providing, at the lowest possible cost to themselves, an allowance during incapacity for work caused by sickness or accident, and a certain income during their declining years. This object is carried out by receiving and investing such periodical sums as those who join the fund can afford, and by supplementing these sums by a bonus fund created and maintained by those interested in nurses and nursing institutions. Tables have been so arranged that for a quarterly payment—the amount of which depends upon the age at joining the fund—a pension is guaranteed. A nurse of twenty-five years of age, with a salary of £25 per annum, who pays into the fund £3 5s. each year, or 5s. 6d. a month, will be able to ensure a minimum pension of £15 a year after sixty years of age for the rest of her life, and it is hoped that bonus additions will bring the sum to £26 a year. In short, the hope of the promoters is that every nurse who pays one-eighth of her income into the fund will receive two-fifths more in the way of pensions by the action of the bonus fund when she attains the age of sixty. Should any nurse aged twenty-five desire to ensure an allowance of 10s. a week during the time she may be permanently disabled by sickness or accident, she may do it by a further payment of 15s. a year, or 1s. 3d. per month. When we remember that nursing the sick is very exhausting work, and that it makes such large demands on the strength that few can continue it to an advanced age, we realise how important it is that nurses should, by joining this society, make some sort of provision for the time when they have ceased to earn money.

Cookery.—A large number of women are at present making a living by means of their knowledge of and skill in cookery, either as trained teachers of cookery or as practical cooks, who may either hold permanent positions, or go out by the day. One of the latest developments in this direction is the establishment of lady cooks, who take the management of dinners of ceremony for mistresses of households who wish to entertain their friends, but who are unable to prepare a feast without assistance. To the great relief of these individuals, a trained cook will take on herself the responsibility of the ceremony, will present a *menu* for approval, carry it out on the spot, see all dishes properly served, and remain in the kitchen until the meal is concluded. For her services she receives from 15s. to 20s. per dinner, and she has the assistance of a kitchen-maid. There are trained cooks who, for work of this description, are making £4 or £5 per week during the season.

Schools for the teaching of all branches of cookery are established in London and several large towns. In many schools also cookery is taught, and the School Board employs a considerable number of teachers. The salaries of staff-teachers vary from £1 to £3 per week. Lecturers on cookery are paid so much per course, the amount being dependent on private arrangement.

To obtain success in cookery, the chief requisites are thorough and systematic training and experience. The following are the most celebrated schools:—

The National Training School for Cookery, Buckingham Palace Road, N.W.

Liverpool Training School of Cookery, Royal Institution, Colquitt Street.

Manchester Domestic Economy Classes.

Edinburgh School of Cookery.

Training Schools in connection with the Northern Union, Central Office, 90, Albion Street, Leeds.

Mrs. Marshall's School of Cookery, Mortimer Street, London.

The terms and regulations of these schools can always be obtained on application.

CLOCKS AND WATCHES.

ONE of the most useful articles in a well-regulated house is a good clock; one that can be really depended upon; not one that has been chosen for its fancy exterior, but that some honest watch and clock maker has guaranteed to be a faithful servant. Such a clock Charles Dickens speaks of when he says: "How can I convey to others the idea of comfort

and consolation that the old clock has been to me for years past? It is associated with my earliest recollections: it stood upon the staircase in my dear old home nigh sixty years ago. I liked it for that, but it is not on that account alone, nor because it is a quaint old thing, in a huge oaken case curiously and richly carved, that causes me to prize it as I do:

I incline to it as if it were alive, and could understand and give me back the love I bear it. And what other thing that has not life could cheer me as it does, or prove the same patient, true, untiring friend? How often have I sat in long winter evenings, feeling such society in its cricket voice, that running my eyes from my book and looking gratefully towards it, the face, reddening by the glow of the bright fire, has seemed to release its staid expression, and to regard me kindly! How often in the dark tranquillity of night has its bell broken the oppressive silence, and seemed to give me assurance that the old clock was still a faithful watcher at my chamber door! My easy-chair, my desk, my ancient furniture, my very books; I can scarcely bring myself to love even these last like my old clock. And these *were* the clocks. Its very pulse, if I might use the word, was like no other clock; it did not mark the flight of time every moment with a gentle second stroke, as though it would cheek old Time, and have him stay his pace in pity, but measured it with one sledge-hammer beat, as if its business were to crunch the seconds as they came trooping on, and remorselessly to clear a path before the Day of Judgment."

Kinds of Clocks.—Of course every one cannot become possessed of such good old-fashioned clocks, and we cannot recommend a more durable and reliable make than the modern eight-day tall clock, which strikes the hours on a powerful bell, and if placed in the hall or on the stairs, can be heard in every part of the house. They cannot strike wrong numbers, having an excellent arrangement to prevent it; but the more ordinary common clocks are not fitted with this device, and hence they often strike three at five, or six at ten, &c.

After becoming possessed of a good serviceable household clock, most people further require an ornamental one, with marble case, for drawing or dining-room; also plain quiet ones for the bedrooms, and a strong one for the kitchen. Even a working man in his cottage parlour—or sitting-room, as it is generally called—tries, if he is wise, to procure a neat, useful marble timepiece for the mantelpiece, without which there always seems life lacking in that cosy room; then in his kitchen should be a plain useful clock, and one that will serve him all his married life. This should be an English eight-day clock to hang up, seeing that all the floor surface is required for his family. Such a one will cost £2 10s. to £3. Do not buy a rubbishy cheap imitation, with its wheels stamped out by machinery, from sheet brass no thicker than tin, and the pinion parts wire; all the wheels, plates, &c., being soft, and soon wearing away, are a constant trouble, and

costly in the end, though the outer case may be decorated with fretwork or cheap carving, and lacquered brass ornaments. The eye is gratified, but that is all. These cheap clocks are sold at 12s. to 30s., according to ornamentation. Our English makers would, however, do well to improve upon their plain cases, and so keep up with the times; and if so, a great many more of the better English makes would be purchased than are at the present day.

For a bedroom a good eight-day "lever" clock will be found useful, and as they are not expensive, they can be replaced when requiring much repairs. Such timepieces are extremely handy and useful. As they are fitted with lever escapements, they can be placed in any position without attention to being level or in beat. They cost 4s. to 12s., according to finish, and are usually American. In this instance the English makers might compete, with their superior and more accurately-cut wheels, and bring out a durable alarm clock, in nickel case, that would drive the cheap Americans and Germans out of the field. The majority of people are now requiring hand-sewn boots, &c., and so in time will they again require really good hand-made clocks.

In an English gentleman's house, a superior made skeleton clock under a glass shade, showing all the parts in motion, well constructed, and of best finish, striking the hours, halves, and quarters on different gongs, looks exceedingly well. These cost from £25 to £75. Cheap imitation ones are in the market of French make, striking one at each hour, but, being of poor soft metal, soon become troublesome; they are sold at from £2 to £5. Some prefer those handsome chiming clocks, in oak or ebony cases, with silvered dials; the top part of the dial has two levers—for striking, or silence. Being a modern article in imitation of old English, these clocks are of the best possible quality, and cost from £40 to £80, but they always look well, and give a superior appearance to a dining or other room. In the hall—if not an admirer of old carved oak and antique Chippendale furniture—a good Vienna regulator, with brass lacquered weights and pendulum, which goes eight days, and is a correct timekeeper, looks well. Being superior in finish and style, these are reliable and durable. Some prefer a Cuckoo clock of the cathedral shape, costing about £8 to £12. At each hour the bird partly opens the door, and when the minute-hand points on twelve, it throws the door wide open, calling "Cuckoo" each time it moves its body, while a deep-toned gong also sounds the hours at the same time; when it has finished, it pops in, and closes the door after it; at the half-hour also it calls once in the same way. The movements of these clocks are of excellent quality.

Care of Clocks.—Householders who possess valuable clocks should engage a clock-winder, who calls once a week and sets all to correct time, rectifies any little error, and, if necessary, oils them, thus saving the owner cost of repairs several times in a year. All classes of clocks go better and longer, and are more useful, when kept regularly wound; the charge for one year being from 10s. 6d. to a guinea, according to the number the man has to attend to. How can an ordinary person know when they require cleaning? and if they are attended to in time, it saves the pivots and holes from being worn. In no case let clocks go too long without cleaning. They will wear an ordinary life-time and more—even the very commonest—if oiled occasionally, and cleaned when dust and grit has by some means got into the parts.

The common lever bedroom clock, being so neatly encased, very rarely requires cleaning or taking apart, seeing that it is almost impossible for dirt to get inside. The only danger is that they may become clogged up by using any sort of oil that comes handy, such as sweet, common machine, rape oil, &c. These get gummy, and soon the lever loses freedom; then a poor half sort of tick denotes its final collapse. Use no paraffin or kerosene oil, as they dry up in a few days, and the clock is worse than ever, because some will have got into the coils of the mainspring, and cause a harsh biting grip of one coil upon another, so that before it is half-uncoiled power is gone. Hundreds of clocks we have had to repair, of which the owners said, "They used to go thirty hours or eight days, as the case might be, but now I have to wind up twice as often to get the time out." The usual cause was touching up with paraffin. When you are going to oil, first wipe all the old oil off with clean rag; then use best almond oil, or the finest sperm oil only.

In replacing the clock into position, say it is an ordinary marble or imitation marble one, with visible escapement (*i.e.*, the escape wheel and pallets are in the centre of the dial), the mantelpiece or sideboard may not be level, or you may have put the clock out of beat by taking it out of the case to oil, &c. It now goes with a halt—that is, a heavy and light tick. Do not bend the pendulum crutch (that part which moves the pendulum to and fro), but carefully hold the pallet part in front, and slightly move the crutch to one side (it moves rather stiffly); now see if it is in beat. If it is worse, move it the other way, until you have a clear, full, and equal sound on both sides; nothing annoys a good ear worse than bad music or a halting clock.

Should it be a clock that hangs up on the wall, just move it a little to one side until it beats equally; then make a pencil-mark (to keep when winding up), or

place a small tack or pin at one side to keep it in position. If it looks rather aslant when in beat, after setting it perpendicularly, the hands, dial, &c., must be taken off, and the crutch slightly bent at the thinnest part, until the tick sounds even. Now replace dial and hands, and be sure to replace them the same as you took them off, or it may strike when a quarter past or a quarter to the hour. This is often done, but a little thought will set matters right.

It is better to purchase one well-made clock than several of poor quality, which are a constant source of annoyance. The rage for cheap trash is fast fading away, and many mushroom manufactories in America of cheap horological goods—or, rather, not "cheap," but low-priced—have "closed down," as they call it over there; some run by shareholders have lost nearly all they invested. Clocks made and sold at 22s. a dozen are a complete wreck inside of twelvemonths. By purchasing of a good firm, one may procure a genuine English-made clock for £2 10s. and upwards. The reader should believe no one who says other countries make as good. They do not. For cheap quick-made goods they use soft brass, a remove from lead, and the pivot holes are out of shape in a short period; the teeth of wheels are all worn on one side, nearly cut through, while the wheels of an English eight-day clock are scarcely marked. Be sure of this, that best is cheapest, most reliable, and gives greater satisfaction in the end.

An old grandfather clock we possess, handsomely carved, has musical wires stretched on the inside of the case along the back, of fine, heavy, rich tone when struck by the hammers the same as a piano. It plays a different secular air every week-day, and a sacred piece on Sunday.

"Like the old clock which flings
Such sweet tones from its trembling strings,
It seems as though a Spirit hand
Had flung them from a brighter land."

Watches.—All ladies and gentlemen wear these, and many different opinions are held as regards a good and useful article. Our experience, after handling all sorts, from the 5s. metal to the £100 repeater, for the last thirty-six years, is that a well-finished Clerkenwell-made English lever is best and cheapest in the end. Thousands of them have passed from father to son, and even to grandson, and then do not show the wear that many American, German, and Swiss watches do at one-third of the age. It is not always the *wear* that shows, however, but abuse in using.

Too often it is the case that a father gives to his son, when too young to understand or care for it, a valuable lever. This the son regrets as he grows

up, when the injuries are past remedy. The best plan is to give the boy or lad a Waterbury, or similar stem-winder, so that he may get used to a watch; and by the time he is through with this sort of watch (especially if he has the repairs to pay for himself), he will be fit to care for and appreciate the superior lever his father or friends may then give him. Formerly, it was the custom to present a young man with a watch when his apprenticeship was completed, at the age of twenty-one years; of course, in this day that would be ridiculous! We like to see even a schoolboy with a watch, be it ever so common; and when we see a workman without one, we guess the cause, for he can really afford it far better than the clerk.

Choosing a Watch.—Choosing a good watch is not so easy as some people think. Only give them money, they can of course buy anything. Some say, "Always go to the largest shop, and you will be served best;" according to which dictum the small honest-dealing tradesman must sink into oblivion. Many hundreds of small tradesmen will put a good watch into one's hands for their own future credit, and at a moderate price, *because* they have not such excessive rents or salaries to pay. On the other hand, large houses of repute were once only small affairs, but got a good name by selling a sound article and of good quality.

Of course, some wear expensive watches, such as gold repeaters, costing from £60 to 100 guineas; they are very liable to get out of order, and very expensive to repair, as they take up much valuable time, and of the most skilled workman; but those who wear them never feel a little extra expense. Some also play a tune every three hours, but they are more curious than useful, and a little clumsy in style compared with a handsome centre-seconds in hunting cases. The last-mentioned is the best watch any gentleman can invest in—a full-jewelled 18-carat gold English centre-seconds, with compensation balance, and stop-action, if you choose; but if the stop is much used, the instantaneous stopping of the balance when in full swing is injurious. A watch of this description will cost from £25 to £50, according to the weight of cases: without centre-seconds it will be rather less, and it is to be remembered that, though they look so well, a centre-seconds is not really needed except by professional and racing men, and makes a watch rather more delicate as well as more costly. To purchase a good watch with light cases is bad policy; they should at least be $2\frac{1}{2}$ oz. to $3\frac{1}{2}$ oz., or (open-faced) 2 oz. to 3 oz. Choose also plain smooth cases, as all the chasing or engraving is only to save gold; ornamentation at the expense of utility.

Chronometer watches were more worn formerly than they are now, as that escapement is liable to stop by a sudden jerk. So also is the duplex watch. The former style is very expensive new, and so are the repairs when old. As to the supposed superiority of a chronometer over an ordinary good lever, there is not much until the oil begins to solidify; then comes the difference, now shown clearly, as the lighter balance of the lever, and the greater number of the frictional parts, place this escapement more at the mercy of a thickened unguent. Besides this, the impulse of the chronometer escapement is delivered more favourably than that of the lever; and it appears to be a further advantage that the balance of a chronometer is not so much meddled with by the escapement as that of the lever. The accurate time these keep is really wonderful, recording day by day so truthfully, though going through so many and various motions caused by the wearer, who may be walking, running, or riding, as the case may be.

A very accurate watch is an English lever with gold balance. If the balance is full size, its time-keeping is "A 1"; certainly much superior to what are so often passed off as compensated balances, and which are mere imitations—not cut through, only marked on the rim, and therefore useless, as it cannot expand or contract with heat or cold. In purchasing, note this particularly; also that *two* metals should be used in the rim. Many foreign watches are thus "faked," as our American cousins say.

To those who admire a gold watch, but cannot afford to pay for such as just described, the next best is a 14-carat (don't get a 9-carat, which is not gold, but two-thirds base metal, and one-third gold, or nearly so) Geneva lever, which are made with fairly strong cases and full jewelled, real compensated balance, and a white dial. Very few can tell these from an English lever, and they cost one-third the money. A watch of this quality can be bought for £7 in stout cases, and they keep first-rate time, for we have tested many. This class of watch will not, however, *last* the years an English lever will; and, indeed, it cannot be expected. With fair usage it will, however, wear twenty to thirty years, and give satisfaction. There are lower-priced watches of this sort with light cases, gilt dials, jewelled in one or two pairs, cases about 10 to 15 dwts. These become dented all over in twelve months' wear, and are sold chiefly by pedlars and auctioneers at 50s. to £4.

Far better purchase a gold- "filled" Waltham, Elgin, Hampden, or Keystone watch, all American made. The movements of these are good and strong, and the two first are well known. They have the quick train movements, and keep most accurate time. The saving is in the cases, which, to help description,

we may call a gold sandwich; that is, by powerful machinery the cases are made by using two sheets of 18-carat gold (or 14-carat), with a stouter sheet between of base metal. The gold sheets are as thick as stout writing-paper, and the case-makers place a printed guarantee inside each that they will wear fifteen to twenty years. Fahys and others are great makers of them. They form a handsome and massive case, full size (18) generally, and with various movements to choose from; the purchaser can have a most stylish and useful watch at a reasonable price. In America this class of watch is mostly worn, and it has nearly ousted the silver case altogether. They are easily to be procured in the States, as 38 dols. (£7 15s.) is the selling price, one dollar weekly being often paid until the thirty-eight is complete. In appearance they almost surpass our £20 ones. There are many factories working upon them, and thousands are turned out weekly. We think if our country adapted itself more quickly to such improvements, it would be better; we seem so slow in the eyes of our "consins across the water;" we wait so long to see if such innovations will be successful, and let them reap all the benefit. Years ago English makers *might* have made watches to compete with Swiss; at last they saw into it, and now we are doing so, but much time and money have been lost meanwhile.

Common gold-plated watches are sold at 12s. to 25s. each, but money paid for such is thrown away, for the cases are brass, and are soon threadbare, shabby, and of a disagreeable yellow colour that no polishing will keep bright; even a schoolboy despises them. Better by half were the money spent on a nickel-silver cased one, which will keep bright with wear. The best watch to purchase, if you do not care to have a gold one or American gold "filled," is a good sound three-quarter-plate English lever, jewelled, and with hall-marked sterling silver (size 18) cases, 3 to 4 oz.—3½ is generally preferred. In this class you will get a watch that for durability cannot be surpassed, and sixty years hence will be a creditable article; not so if you purchase an American lever. For many reasons the latter will, like fast people, be old before its time. The plating on English lever movements is of a better quality. See an American lever (never mind what make) after ten years' wear; the plate will not keep bright, because the plating has gone, or nearly so, through being cleaned. Thus they go dull, dark, and dead, while at the same ago an English lever comes up bright, and remains so. The class of English levers referred to above will cost about £6, and generally every £1 under this sum is *more* than that amount worse; therefore don't grudge £1 when you want a life-time servant. We do not mean to say that you may

not get a good silver lever for £1 10s., but the purchaser, if he possibly can, will have the best, if he is wise.

The introduction of novelties in lever watches has been tried, but they are not popular; there was one showing time without hands, having two orifices, to show respectively hours and minutes, on revolving discs; the top opening shows the hour, the other the minutes. It *seems* a handy style to tell time at a glance, but somehow the good old style is the best, and the company who brought these out will have seen the mistake. So also the twenty-four hour watches. Some, again, show the moon's phases. Then there were the self-winders, which were sure to fail unless you did a certain amount of walking to oscillate the lever weight; they are like a hall clock a gentleman had fitted up, that each time a visitor passed in at the front door partly wound the clock, but in stormy weather the clock got low and stopped. All these things are "fads."

At a less price than is paid for English levers, we have Walthams, Elgins, &c., with strong full-weight silver cases, certainly not our quality of silver, but coin silver, which wears as well as English, but never so bright. These have fairly well-finished movements, which have no fusee or chain to equalise action of mainspring, but use a finely-tempered and longer spring than we do, so that the watch performs accurately; but should anything occur to break the original spring, such as a sudden change in the weather, probably an ordinary spring will be inserted, and then the watch will never perform as accurately as before. Every watch repairer does not study this, or even care. Still, on the whole, you may have a good serviceable watch at from £1 to £2 less than English prices. All is done rapidly in America by machinery. If you put various sorts of watches under a good magnifying glass, and don't hurry, but carefully study them, you will rise up convinced, and pronounce the Clerkenwell-made watch the best finished in the market. Next come Liverpool firms, then Coventry.

For useful work and fair wear, next in price comes the Swiss watch with horizontal movement. These have a good name for timekeeping, and if rightly used will be serviceable for ten to fifteen years; after that they become troublesome and expensive. They have a very beautifully-finished escapement, simple, and easy to understand. Notice the escape wheel, how small and accurately fitted it is, and cut so correctly; in our opinion it is the neatest piece of workmanship in any watch. They have a going barrel; that is, in winding you are turning up the spring direct—no chain. Those with skeleton movements are very easy to take to pieces and put together again. The cases are fairly stout,

and of coin silver; and certainly the money is better expended on a good one than on a *poor* lever. These watches are sold at 30s. to 60s. in good qualities; cheaper can be had, even as low as 15s., but are useless unless for a boy. Some are fitted with a more bulky case, to "look English, you know;" also a centre-seconds is added, and stop action to time races; a great many of these will not start again unless they are well shaken, for it is putting too much on a movement that is not strong enough for centre-seconds work. Such watches are constantly stopping, as one might be sure when hundreds are offered at 21s., and even less.

After these comes the "short-wind" Waterbury, which has the duplex escapement—that is, double teeth. They are certainly a great improvement on the long-wind Waterbury, with its two minutes' winding on a cold night in winter. The old verges no one will now buy, except as curiosities. They never kept time, and only five minutes' error is a most wonderful thing in a day, though some will yet deny this. Imagine now anyone going daily to get the time as people used to do: how everybody would laugh! A train would be out of the question unless you went fifteen minutes sooner. These old verge watches had the best silver cases, works well made, and the finish excellent; but the escapement was radically bad—so that if you walked slow, they went slow; if fast, so did they. They did well enough for our grandfathers, whose time was of no value.

Care of Watches.—We have now given an impartial account of the respective value of each class of watch; next, how to take care of them. Wind up regularly *as near the same hour* as possible. It is a good plan to wind in the morning, so that all the power is on at full for the jolting during the day. We have tested this, and it is decidedly better; but bad to remember to do it every morning.

Beware also of electrical currents. These are at

present more dangerous in New York than anywhere, for there they are above you, and under you, and everywhere. In entering a street-car, you find it propelled by them. These often spoil a watch. The injury is done to the hairspring, causing one coil to stick to the next, and so on. You can have watches "demagnetised," but it is costly, and meantime the watch is no use as a timeist. An outer protecting case of vulcanite is much worn in America to save them, but is of no real use. Some movements are specially made to stand an electric current, the parts affected being made of some other substance than steel.

A worse thing than injury from the above is having your watch stolen. This, too, is fearfully common in America, in consequence of the overcrowding in street-cars. One to seat twenty-five will have forty or more half standing, holding by the straps which are fixed for that purpose, and several watches will change pockets in the journey. This is no exaggeration, and in a less degree the same holds good in London omnibuses. One good plan to save your watch is to put it in your pocket wrong side up: thieves cannot then draw it out by the chain. Another is to get a small loop worked inside your pocket, at the front near the top. Slip the chain through, then attach the watch, and it is safe.

There is no special sign when a watch requires cleaning: but by attending to this regularly, your watch will wear longer, be a better servant to you, and cost you less in the end. Have it cleaned *once a year*, therefore, whether it seems to want it or not. Let the cleaning be any time before winter, so that it will be in good order for that period. If anything goes wrong, have it attended to at once.

In conclusion, buy as good a watch as you can afford, and take every care of it, doing as the words say around an old-fashioned watch dial:—

"Keep me clean, and use me well,
And I to you the truth will tell."

PAINTING, ENAMELLING, STAINING, AND VARNISHING.

EVERYTHING is nowadays made so easy for the amateur, whether he be inclined to take up painting, varnishing, or any of the kindred arts, that many people think far less of the trouble of decorating a room in all its details than of that involved by the arrival of a small army of work-people to execute the task for them. At the same time the beginner must not be disappointed if his first attempts do not equal the work done by a professional decorator. We all know the story of the artist who, when asked

with what he mixed his paints, replied, "With brains, sir;" and well will it be for that amateur house-painter who bears this in mind, and devotes his whole intelligence to the work, instead of allowing his thoughts to stray, under the impression that the business is purely mechanical. The workman who is quick to see the faults in his own achievements, and who thinks out for himself the reason why such mistakes have occurred, has a far better chance of success than he who sets to work in a slap-dash

fashion, taking little heed of the fact of there being a right and a wrong way of doing things.

Painting operations are greatly simplified by the fact that the amateur has no longer the trouble of making himself acquainted with the properties of the various colours required, or of grinding and mixing them for himself—an operation which requires both time and experience to accomplish satisfactorily. All colours are to be bought ready for use; for non-professional workers they are put up in neat little tins, often provided—in the case of stains and varnishes more especially—with a handle over the top, by which they can be moved about easily from place to place. Paints for indoor use cost usually from 6d. per pound and upwards, and any good firm who cannot supply a particular shade of colour will always undertake to prepare it specially.

Removing Old Paint.

It is only necessary to remove old paint from woodwork when it is in a particularly disreputable condition, or when, instead of being painted, it is to be stained. There are several different ways of taking off the old paint. We should recommend no amateur to try experiments with lighted naphtha, or with any of the portable lamps used by professional workers for this purpose. The safest plan is to employ some mixture—and there are several—sufficiently strong to dissolve the paint, and render the task of wiping it off an easy one. One of these is the Eclipse Paint Remover, and another Carson's Detergent, either of which is simply applied with a brush to the woodwork, left on for a short time, and then wiped off. The paint should then come off with it. The strongest soda and water will sometimes have the desired effect, but better still is a mixture of lime and soda, moistened with water to a smooth paste. Lay it on with a palette-knife, and after a few hours it should be soft enough to be scraped off, and the paint should be so far dissolved that every trace is removed with it. The woodwork should be well washed, and allowed to get perfectly dry. It is then painted over with vinegar, to get rid of any particles of lime there may be remaining in the

grain of the wood, and which would be likely to disturb the new paint. Another way of removing paint is to mix soap-lees and fuller's earth, rub it in well, and let it dry. Then scour it well with soft soap, sand, and hot water.

Brushes.—The would-be house-painter must remember that little good work can be done with inferior tools, and, once procured, he must be prepared to keep them in good order, giving due attention to cleaning them when the day's operations are over. The amateur will at first perhaps be somewhat

surprised at the prices that will have to be paid for the brushes, but in the end it will be found better to invest in good tools than to buy half a dozen poor ones, which will not stand even the smallest amount of hard usage. In the first place, no worker should select a brush that is made of fibre instead of bristles. Such brushes are often remarkably cheap, and perhaps answer well the first time they are used; but after they have been once cleaned and are employed again, the fibres begin to drop out, and, of course, spoil the look of the work. The first two or three are easily removed; but when they fall out by twos and threes with every stroke of



Fig. 1.—
GROUND
BRUSH.



Fig. 2.—
SASH TOOL.



Fig. 3.—
DUSTER.

the brush, the matter seems more hopeless, and the painter soon regrets that he did not buy a more expensive brush in the first instance.

The characteristics of a good brush are:—First, its elasticity; the bristles should spring rapidly back into place when it is pressed against the hand. Secondly, the bristles should be set tightly and firmly together, so that the brush, when drawn through the fingers, feels compact and solid until the point is nearly reached, where the hairs should begin to taper gradually to the tip. Thirdly, the handle should be pointed and quite small. If the brush is round, the handle must be of the same shape; if flat, the handle too should be flattened. This is done in order that there shall be an equal amount of hair distributed over the end of the handle, and so the work done by it will be more regular; also, when the hairs begin to get worn, they wear more evenly than when the handle is of a

different shape. For ordinary purposes, the brush known as a "ground" brush, given in Fig. 1, is the most generally useful. Those in smaller sizes (Fig. 2) are called "tools" or "sash-tools," and cost from 4d. to 2s. 6d. each, according to size. Some are bound with copper wire, others with string, whilst others, again, are fitted into tin sockets. The former are perhaps the most durable; but the amateur will do better if he can persuade a working painter to part, for a consideration, with brushes which have already seen a little service under a practised hand. It is often recommended that an extra tie of string be added to the bristles, so that the brush lasts double the time it would otherwise do, as the bridle can be removed as the bristles wear down. These ties can be had ready-made, and answer far better than any that can be made by the amateur himself. The bristles should never be dipped into the paint for more than half their depth.

Fig. 3 represents a painter's dusting-brush. This, it will be noticed, has longer bristles than any of the others, and they have a tendency to separate at the points, instead of being firmly bound together. These brushes cost from 1s. 6d. to 5s. each, according to size. Some workers have an idea that it is advisable to use an ordinary paint-brush for a duster for some time before putting it into the paint; but this plan is open to the serious objection that the brush is apt to hold the dust, which becomes sifted out over the paint when it is taken into use. For fine work, small hog-hair brushes, of the sort known as "fitches" (Figs. 4 and 5), are useful, especially when certain portions of woodwork are to be painted of a different colour to others. For finer work still, sable or camel's-hair brushes are of use.

When the brushes are done with for the day, and if they are likely to be required for use with the same paint on the morrow, they should be laid in a pan of water in such a manner that the tips of the bristles are not likely to become injured. The next day, if the superfluous water be gently wiped and shaken off, they will be found quite soft and ready for use. When they are not likely to be employed again for some considerable time, all loose paint should be scraped off with a palette-knife or a piece of slate, and the brushes cleaned, first by dipping them in turpentine, afterwards working

them to and fro along a board till nearly all the paint is taken off. They should then be washed in warm soapy water, rinsed well, and hung up to dry bristles downwards, so that their shape is not disturbed. It is a good plan to hang up the brushes so that their bristles are immersed in linseed-oil. They can be suspended from an ordinary wire bill-file, if the hook be bent upwards, instead of downwards, with a pair of pliers. The base of the file should be weighted with a piece of lead, and placed in the oil. If a loop of string is then tied to the handles of the brushes, several will hang quite securely from the hook. Care must be taken that they do not touch the bottom or sides of the receptacle holding the oil. When out of use, they should either be hung up or laid bristles upwards in a long narrow box or drawer. As with artists'

more delicate brushes, their days of usefulness are over as soon as their bristles become in the least degree bent. Should any paint be left at the end of the day, it may be kept in good condition by

pouring a little water upon it. This keeps the air out, and prevents it from becoming dry by absorbing the oxygen.

Painting.—The method of painting, especially for indoor work, must depend upon whether new or old wood is to be operated upon. If the wood is new, the first thing to do is to "kill the knots," which, if the timber is not thoroughly well seasoned, are apt in time to ooze with turpentine, and so will cause the paint to become discoloured. For this, a coat of patent knotting must be applied. This is a preparation of red lead, oil, shellac, and size, and usually requires to be applied warm. It costs about 3s. 6d. a quart. It will generally be sufficient to prevent any oozing; but if the wood is very green, the knots should be overlaid with silver-leaf. The knotting must be left for a day to harden, and then thoroughly rubbed down with pumice-stone. This operation will leave a quantity of grit upon the paint, which must be brushed off with the duster.

The first painting is known as "priming," and it consists in laying on a thin coat of paint, to serve as a basis for the other and more solid coats. The mixture required for this process contains more oil and less turpentine than the later coats, and a mixture of red and white lead with litharge,



Fig. 4.—ROUND HOGHAIR FITCH



Fig. 5.—STRAIGHT HOGHAIR FITCH.

which is commonly known as a dryer. On a large surface it may be laid on with a distemper or ground brush, such as that in Fig. 6. This also must be allowed to get perfectly dry, and is then rubbed down with glass-paper. This must be carefully done, so that the rubbing is equal over the whole surface of the paint. The paper is more convenient to use if it be wrapped round a block of wood; and a good-sized piece will be more convenient than a very small scrap. For the ins and outs of the wood, such as mouldings and corners, the glass-paper may be folded round a piece of firewood cut into a wedge or pointed shape, so that even the sharpest angles can be rubbed down equally. The duster will next be required to remove all loose grit.



Fig. 6. — OVAL GROUND BRUSH.

For the second coat, about three parts of oil to four of turpentine are used with the paint. This, too, must be allowed to get dry before the third coat, in which the oil and turpentine are in equal proportions, is laid on. The fourth coat is the same as the third. The last of all is known as "flattening," when a dull appearance is desired, which is gained by the use of one part of oil to two of turpentine.

The art of getting a smooth surface in painting lies in the manner in which the brush is passed over the wood. The colour must be laid evenly all over the surface, the brush then crossed over it in every direction; finally, begin again at the top, draw the brush down firmly, and then from the bottom upwards. Be careful that no drops of paint are left in stray corners. The last strokes of the brush must be softly and carefully managed, so that no streaks are left. When a portion of the work has been finished, and the rest has, as it were, to be joined on to it, the brush must be passed evenly over the point of juncture, in order to leave no hard ridge of colour.

In re-painting old wood which has been painted before, the colour need not be scraped off, unless it is much blistered and cracked. If very dirty, it must be thoroughly scrubbed with soap and water. When dry, it is rubbed down with a lump of pumice-stone, which is frequently dipped into water, and then gone over inch by inch with a "stopping knife," such as shown in Fig. 7. This stopping up of holes is done with putty, or a "hard stopping" consisting of a mixture of white lead and putty. The great secret of

stopping holes and cracks successfully lies in doing it thoroughly—that is, not resting content with merely covering a hole, but pushing the putty well down as far as the knife will reach, and then smoothing it over on the surface with the knife. Should the old paint be blistered and chipped, the hollow must be "brought forward" by laying over it three or four coats of paint. When these are dry, it is easy to rub down the patched places with pumice-stone, to make them even with the rest of the surface. When the stopping is fully set, the painting proper may be begun. No priming, of course, is necessary, the old paint answering the purpose, and about two coats will be sufficient. Each coat, when dry, should be rubbed down, as before described, with fine glass-paper.

Bell's Asbestos Aquol Priming is convenient for amateurs' use, as it has the merit of being almost free from smell. It is also claimed for it that it is fire-proof. It is to be had either salmon-coloured or transparent, the former being used under dark shades, the latter under white and pale tints.

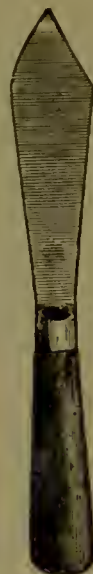


Fig. 7.— STOPPING KNIFE.

Enamelling.—The comparatively recent invention of Aspinall's and kindred enamels has done much to simplify inside house-painting and decorating from the amateur's point of view, but because the enamel is so easy to apply, is no reason why the work should be done, as it frequently is, in a slovenly and careless manner. The brushes used for "Aspinalling" (the verb has been quite adopted) are usually those known as varnish brushes, with rather long soft bristles set closely into an oblong, flattened tin socket mounted in a handle of polished wood. These brushes are shown in Figs. 8, 9, and 10, and cost from 2s. 6d. to 5s. apiece, the price, of course, being dependent upon size, and upon the quality of the bristles. Many people can manage equally well with the ordinary sash-tools or the smaller hog-hair brushes for fine work; but with the varnish brushes to get a streaky effect is as nearly impossible as can be. As much care must be taken as regards cleaning and washing the brushes as when they have been used for other kinds of paint. In painting new wood, it is well to prime with a coat of ordinary paint, the enamel being somewhat expensive; any ordinary priming mixture may be used, if more convenient; or one or two coats of size will be sufficient. On old wood that has been painted before no priming is needful.

Any article to be enamelled must first be thoroughly cleaned and washed: this is more especially the case when it is such as is frequently handled, for any suspicion of grease will spoil the surface of the enamel. The wood must then be well dried, and rubbed with a soft cloth that is quite free from fluff. If the surface be at all rough, it must be well ground down with glass-paper before any paint is applied. The first coat is then laid on, and the amateur must here guard against a very common fault—that of using too thick a layer of the enamel. It can hardly be laid on too thinly for good effect. Care must also be taken not to get it thicker in some parts than in others, and on no account to use so much that it rolls down into the corners, for it will be days before such is thoroughly dry, and there will be little chance of ever getting it smooth again.

When the enamel is all laid on, it must be left to get perfectly dry. The whole surface must then be rubbed down once more, and the second coat applied. These two operations must be repeated until the whole of the paint is absolutely smooth. Two

coats are sufficient for most articles of household use, such as bedroom furniture, chairs, small tables, or mantel-pieces. For any work that is required to be specially well done, the fine glass- or sand-paper used by carriage builders should be employed. This is to be had from Messrs. Tillyer & Co., 430, Oxford Street, and from all high-class dealers in painters' requisite. Should the article painted be such as must undergo very hard usage, it may have, as a finish, a coat of transparent clear enamel, which will effectually preserve it from injury.

The bath enamel is useful for baths and water-cans, such as are subjected to heat. Not less than three coats must be used for a bath, one day being allowed to elapse between the first and second, and two days between the second and third. The paint must be applied very thinly. When the bath is quite dry, it is advisable to fill it with cold water, and to leave it for forty-eight hours, to remove the smell and to solidify the enamel. A bath that has been thus painted without being stoved, should never

be filled with hot water until a certain amount of cold has been put into it. This will cause the enamel to wear much better than it would otherwise do. Articles that have been fully enamelled should always, as far as possible, be removed out of the way of dust until they are dry. When a tin of Aspinall is out of use, it must be kept well covered up, as otherwise the paint will become thick on the top, and will then be useless. The colours are sold ready for use, so the worker must beware of the temptation to add turpentine under the idea of making it thinner, and, therefore, easier to lay on; and the paint must be frequently stirred with a stick, to keep it of the proper consistency.

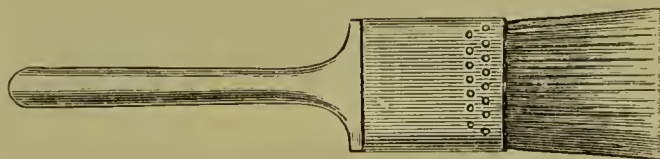


Fig. 8.—LARGE VARNISH BRUSH.

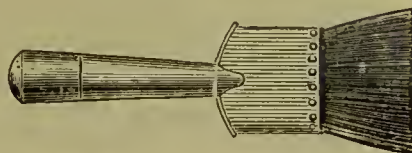


Fig. 9.—FITCH VARNISH BRUSH.



Fig. 10.—BEVELLED VARNISH BRUSH.

Graining.—It has been much the fashion of late years to inveigh against graining as a decoration for doors, panelling, or window-frames; but so great is the durability of the process as compared with that of the plain painting, which is considered in better taste, that there is small chance of its becoming a lost art just at present. It is of little use for the amateur to attempt the graining of the wood-

work of his house, unless he has sufficient talent to enable him to copy exactly the veinings and markings of any special kind of wood that he is desirous of imitating. It is absolutely necessary, in order to do this, that while he works he should keep a section of the wood before him as a guide to the markings. Slices are often to be had specially prepared for this very purpose; while a visit to the wood museum in Kew Gardens will afford ample field for study, provided that the general appearance of the wood it is wished to imitate be copied upon the spot upon a spare thin panel.

The first thing the workman must fully understand, is of what graining really consists. Graining is produced by laying a coat of "graining colour" over a "ground colour." This second coat is combed, stroked, or brushed, and otherwise worked up so that the under-colour is displayed; the streaks and markings of the colours are then shaded and touched up with various implements and tints, to get the general resemblance to the shadows and gradations of tone

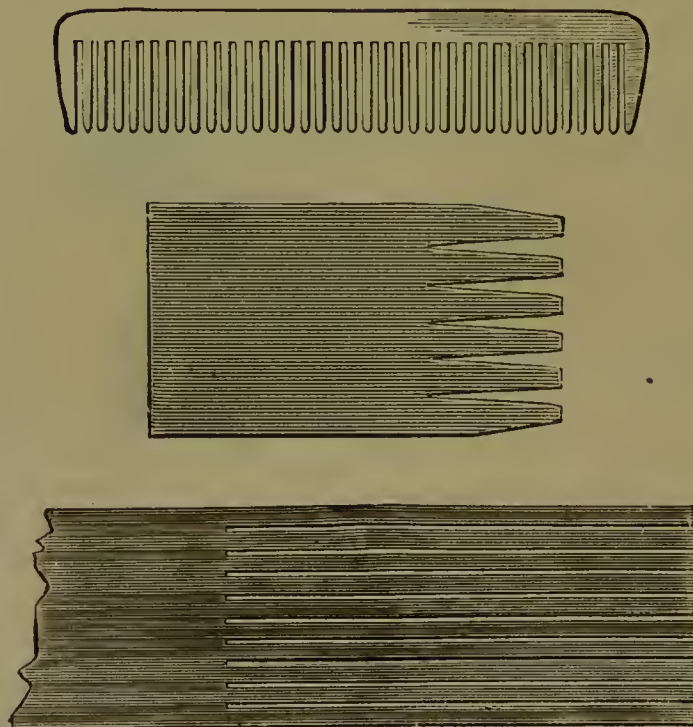
on the natural wood. Those who have had no experience in graining will do well—for a time, at any rate—to confine their attention to combed work only, this being all-sufficient for the edges of stairs, or the “stiles” and “rails” which surround the panels of the bedroom doors. The ground colour, which of course varies according to the kind of wood to be represented, must be applied much as in ordinary painting when no graining is to be executed. Some experience is necessary in order to determine the natural colour that the ground is to be, the general rule being that it must be about equal to the palest shade in the finished model. The wood, when the paint is fully dry, is papered down, and all dust removed with the duster. The grain colour, which is comparatively thin, and resembles a stain rather than paint, is then laid on; the worker must beware of applying it too thickly, the object being, by-and-by, not to scrape off the colour in lumps, but, as it were, to make comb-marks over it without greatly interfering with the substance of the paint in between them.

For plain combing, three combs are usually required, gutta-percha or leather ones of different sizes, and steel combs. A coarse one is drawn down the wood first—not straight, but in a slightly irregular and wavy manner. The combs are illustrated in Figs. 11, 12, and 13. Over the lines thus made is then drawn a finer steel comb. The combs are not to be held quite upright, or an undesirable scratchy effect will be produced, but are bent slightly downward, much with the same action as that employed in using a brush.

Combing in itself constitutes a very poor imitation of polished wood, and few workers will long be content with this. Naturally, the presence of a few knots in the wood immensely adds to the appearance, though it is often stated that the existence of the knots in reality would not add to the quality.

Such knots and curved markings are put in, and then softened with a very long flat brush, called an “over-grainer.” (Fig. 14.) A badger softener (Fig. 15), a mottler (Fig. 16), sponge, and chamois leather, are also required. The artist will further need a good supply of pieces of rag. Old linen is most convenient, but must be free from lint.

The panels of a door are too important to be merely combed, and it is here that what is technically known as the “figure” of the wood is often represented. We must again impress upon the worker that it is most important that this “figuring” should be copied from the natural wood itself. It varies not only with every kind of wood, but even one slice, if it be studied, carefully copied, and then planed, will present on the new surface a totally different figure to that first shown. The figure is “wiped out” with the thumb-piece—a flat slip of wood rounded at the end like a spatula—which is held in the hand on a line with the thumb, and covered with a piece of rag, as shown in Fig. 17.



Figs. 11, 12, & 13.—GRAINING COMBS.

The “over-graining”—that is, touching up and shading with a tint composed of Vandyke brown, black (both ivory and blue), Prussian blue, indigo, and sienna of various tones—is executed next. These tints are used in oak graining—ochre, umber, and black being needed for walnut. Of course, the shades vary according to the wood, and even the actual variety that is intended to be represented. Beer, both diluted and undiluted, is generally used with this stain. The delicate touches are given with the over-grainer, the cloudy appearance found in places with the mottler, until a pretty accurate copy of the original is obtained. The grainer must beware of getting the markings too formal—a likely fault with an amateur who is interested in his task—and be careful to arrange also so that the mottlings and shadowings shall be put in with a light touch, and

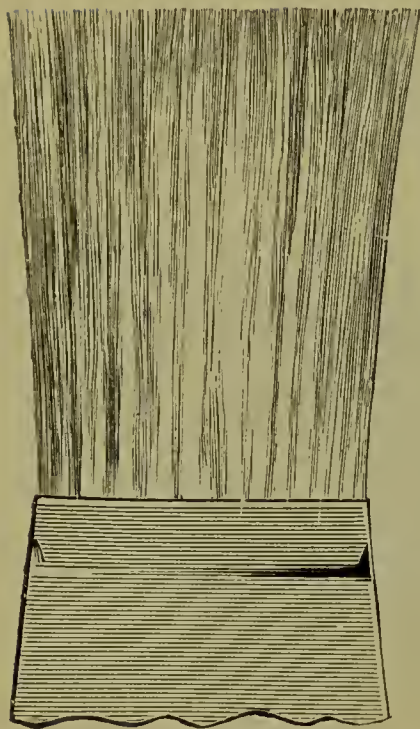


Fig. 14.—OVER-GRAINER.

kept irregular as to their curves. No hard outlines must be left, or sharp angles, for it is the very object of the over-graining part of the business to tone these down, and to get those wonderful gradations of tint shown in the natural veining of the wood.

In a useful little manual on "House-painting," by Davidson, will be found a set of coloured plates, showing the markings of different kinds of woods, which would be of the greatest use to an amateur, and even make a very fair substitute for slices of the natural wood, if he have any difficulty in obtaining these. Various methods of imitating different marbles are to be found fully detailed in the same work.

The knots being first "wiped out" with the thumb-piece in the manner shown in Fig. 17, will produce Fig. 18; and the result of the over-graining is

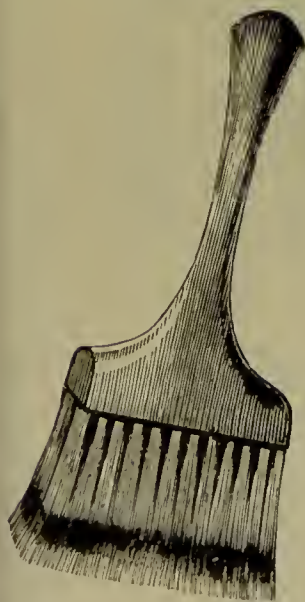


Fig. 15.—BADGER SOFTENER.

shown in Fig. 19. "A London Decorator," writing in a recent number of *Work*, gives such very clear and detailed directions for over-graining that we cannot do better than quote them at length. The door which the grainer is supposed to be at work upon has the rails and stiles simply combed, the panels figured, as above described, the lock rail having a piece of "sap" worked across it slightly towards the top. "Vandyke-brown is the pigment most extensively used for over-graining oak, its richness and transparency making it suitable for all varieties. For the new oak colour applied to our door this pigment alone would give our finished work too warm a general tone. I therefore stain a little of the beer with a little blue-black and Vandyke-brown upon a plate, then dip the long oak over-grainer into the beer, which makes the hair

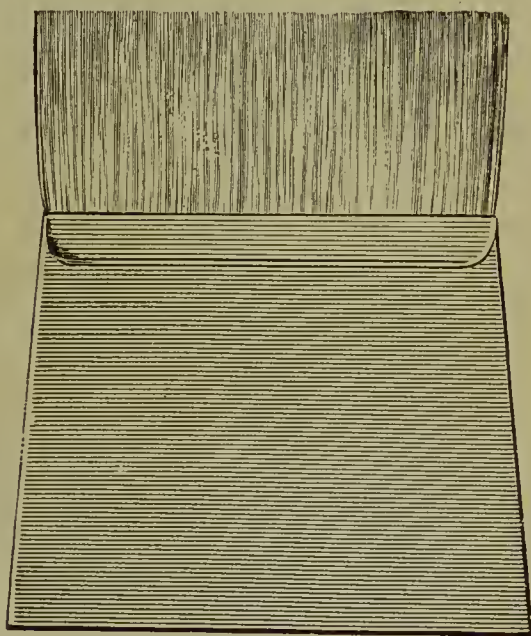


Fig. 16.—MOTTLER.

eling together; and here I work the stained liquid into it, which is already prepared on the plate. If the over-grainer had not naturally formed itself into the two or three divisions of hair, I could easily have given it that effect with the fingers. With the brush well charged, I now place the hair thus divided upon a panel, and draw it down in line with the grain. This shading I prefer to apply rather sparingly down the figured half of the panel; and, as I replenish the brush after each continuous stroke from top to bottom of panel, notice that the hairs must not separate into divisions of too fine a nature, which would give a 'liney' effect to the panels. Before the markings have had time to dry, I now take the badger, and with a gentle 'flicking' motion across the panel ease off the hard edge of

each line. (The worker will easily distinguish the marks of the softener on a slice of wood by their resemblance to tiny hairs, almost like very fine eye-lashes.) Having similarly treated the two upper panels, the shading being only just noticeable, I take the tool, and with an equally thin wash I put in a few broader horizontal shades upon the lower panels, placing them where the grain has been given any decided curl or inclination. This being softened off at once, the lock rail, with its sap, is next treated. The sponge is now dipped into the stained wash, and then, well charged, is 'dabbed' against the knots, or centre of the heart. Before the colour can run down I bring the badger into play, and by it, with a facility acquired with practice, the colour is manipulated into a patch, with its darkest parts over the knot, and its extreme limits so softened as to be nearly imperceptible. Now I take the damp leather, and, by folding it and using my thumb, wipe a couple of sections cleanly out of the knot shade. The badger gives a final softening; and having put in, with the tool, an occasional dark shade where the sap takes any decidedly 'knotty' turns, the lock rail is finished. The two

short stiles between the pairs of panels I now shade with a darker wash of a warmer tone, wiping out a light where the grain turns. Across the top rail the tool is now crossed at broadly regular intervals in a very light wash, and then well softened across. The outer long stiles are finished with solid shading, whilst the wide bottom rail I leave with a dark shading to the lower half, and lighter effect on the top edge, so that the joint of the same, with the small stile between the lower panels, is emphasised and clearly preserved to the eye." The amateur must be specially careful to blend the tints softly, so

that the combing and over-graining give no idea of their being due to two separate processes.

Varnishing.—When once the panels, skirting-board, and window-frames of a room have been well grained, they will need little attention for years under ordinary circumstances, and even then it will probably be found that it is the varnish rather than

the graining which has become worn. We therefore give directions for using varnish upon those parts of a room which require renovating only. The first thing to be done is to remove all traces of dust, smuts, and finger-marks. Nothing is safer or better for this than soap and water, which must be well rubbed over the surface of the work, then rinsed off, and the wood thoroughly well dried. There is an infinite variety of varnishes to be had, according to whether they are required for dark or light oak, for boats, for ordinary graining, or for articles subject to such hard wear as the pews of churches or desks in offices. Then there is pale French varnish, and several shades of it, for very delicate work; crystal paper varnish, for wall-paper, as its name implies;

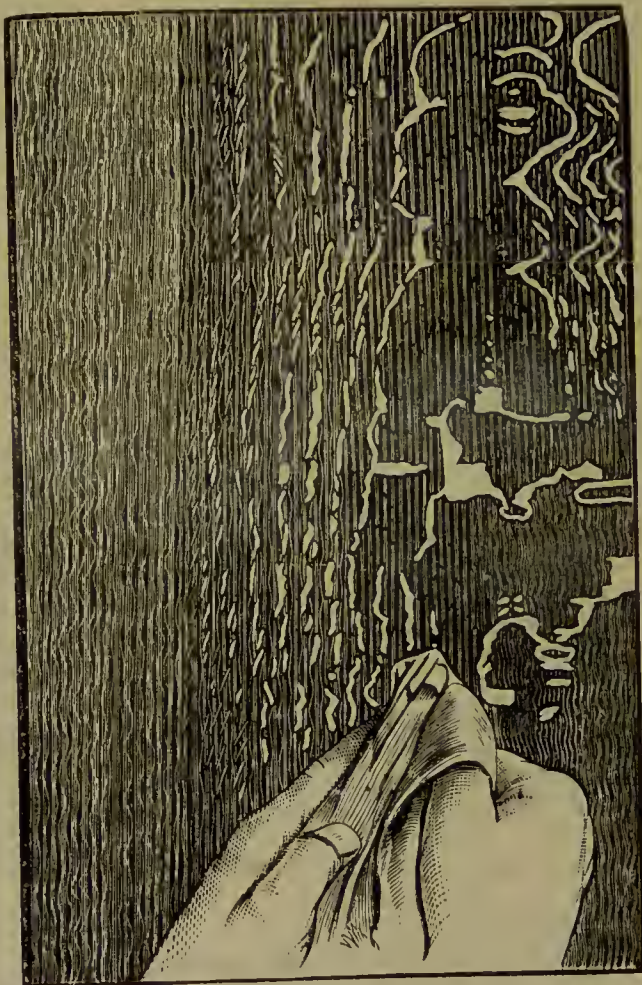


Fig. 17.—WIPING OUT THE FIGURE.

and flat varnish, which gives a peculiar flat or dead gloss. All these require from eight to fourteen hours in which to become perfectly dry. Any respectable oilman will supply exactly the proper kind when the purpose for which it is needed is explained to him, for the days are happily over when the painter has to prepare his own. The typical brushes used for varnish have already been illustrated: but "fitches" are, of course, required for elaborate mouldings or carvings.

The varnish will be found to dry more solidly in a room which is thoroughly heated than in a cool

room or out of doors; but it must be remembered that the proximity of an open fireplace in which a fierce fire is burning is not what is meant by "heat" in this instance. It must be an atmosphere in which the warmth is equally distributed, otherwise the varnish will be likely to crack and peel off. When

smooth; and to get this surface it must be repeatedly rubbed down with the finest glass-paper. French polish, the main ingredients of which are shellac and methylated spirit, is purchased ready for use, and only requires applying with a due amount of "elbow-grease," as old wives say. A rubber is made by



Fig. 18.—WIPING OUT THE KNOTS.

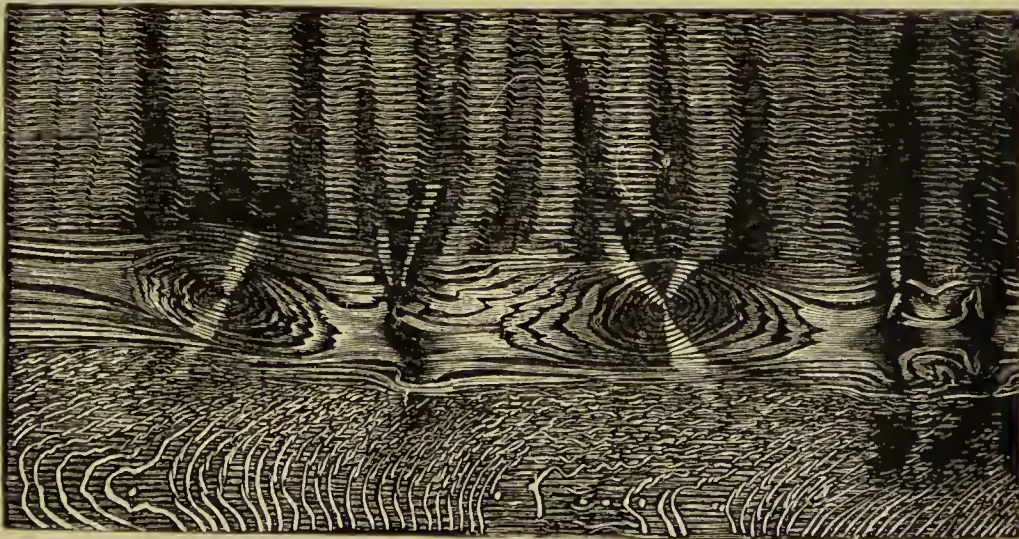


Fig. 19.—KNOTS IN FIG. 18 AFTER OVER-GRAINING.

the varnish is dry, and if it be sufficiently hard to admit of such treatment, it may be carefully polished with finely-powdered pumice-stone and water, and afterwards with a mixture of finely-powdered tripoli and oil. If a little powdered starch be then rubbed over it, a very brilliant polish will be obtained.

French Polish.—Whether the wood to be polished is stained or in its natural colour, the first thing to be attended to is that it shall be absolutely

tying a tuft of cotton-wool up in a round piece of linen rag. Moisten the cotton-wool first with some of the polish, then tie it up with care, that the surface with which the rubbing is to be performed is quite free from ridges and wrinkles. When the rubber is ready, touch it lightly with a drop of oil, using sufficient only to make it slip well over the surface of the wood. Go over the wood well with the rubber, in one position only. More and more polish must be applied until the wood has

a glossy look, but is still covered with a series of smears. The polish must be now left to get thoroughly dry; and if it should then appear to have been entirely absorbed, the "bodying" process must be repeated. Finally, it is finished by the operation known as "spiriting off," which consists merely in rubbing the wood with a pad moistened with methylated spirit. A patent glaze is to be had at most oil-shops, which is ready for application with a rubber.

The last operation must never be performed until the "body" or polish is well rubbed in and is thoroughly set, or there will be a risk of disturbing the polish, and getting a still more smeary effect. No attempt can, of course, be made to polish such details as are carved or bevelled: for these, good oak-varnish must be used, which can be applied in all the crevices with a small brush. Care must be taken not to apply the varnish too thickly; it should only be laid on so as just to lightly cover the wood.

Floor Staining.—In few houses now do we see carpets laid down in the bad old style, so as to entirely cover the floors. This is not the place to discuss the merits and demerits of the plan, which is often a source of great bewilderment to inexperienced housekeepers, owing to the difficulty of procuring suitable "surrounds" which wear well, and are inexpensive. Linoleum, matting, and oil-cloth, each have their special advantages, but, after all have been tried, public opinion generally comes back to stained boards, as being cleanest and best in the long run. One great drawback these certainly possess, which is that the polished surface soon becomes worn and shabby when there is much and constant traffic across it. By the use, however, of the many ready-prepared stains, the renovation of stained boards is such a simple matter that few need any longer object to their use on this account. The stains prepared by Messrs. Stephens, of Aldersgate Street, are to be relied upon, and are to be had in all large towns, as well as in London. They are supplied either liquid or in powder; the latter are to be recommended for those purchasers who live in the depths of the country, owing to the less expense involved in their carriage. The powders merely require dissolving in hot water; and when the mixture is cold, the staining is ready for use. Black stain is to be had only in the liquid form. The liquid stains cost from 4s. to 8s. a gallon; the powders are to be had in 1s. and 2s. packets, and large ones at 8s. These dyes are prepared to imitate three shades of oak, mahogany, rosewood, ebony, walnut, and satin-wood. Mr. Aspinall, of enamel fame, has recently brought out a good set of liquid stains, for which it is claimed that not more than one

process is required; but these are not to be had in a less quantity than a 1s. 6d. half-gallon bottle.

We will first consider that the floor to be stained has never before been so treated, but is still in its white and natural condition. Four processes will be required to complete the staining satisfactorily, any one of which can be quite successfully performed by a worker who has had no previous experience. It is here taken for granted that the floor is absolutely smooth, otherwise a carpenter must be called in to plane off the irregularities. Next prepare a little paste of the stain mixed with plaster-of-Paris, and with a putty-knife work it into all nail or knot holes, and any spaces there may be between the planks. Smooth this down so that it is perfectly even with the rest of the floor, and leave it till dry.

Now measure the border, which, in a good-sized room, should not be less than 1½ feet wide. Measure from the skirting-board, and make a mark at intervals of a foot upon the floor and 18 inches from the wall; connect all these marks with a pencil line. This will probably be necessary round three sides of the room only, as the line of the boards will serve as a guide along the other. Get a thin slip of wood to lay upon the pencil line in order to keep the colouring perfectly even, and commence operations by laying on the stain with a sponge or large brush, being careful to follow the grain of the wood. When the border is entirely covered, it must be left for a day or two, until quite dry. Near the door a sort of bridge, made of a plank supported on two footstools, or something similar, must be arranged, so that any person may enter or leave the room without treading upon the staining before it is finished.

The third operation is that of sizing. The size, two coats of which will be needed for ordinary work, must be rather stiff—in the proportion of two parts to one of water. It should be dissolved in a jar stood in a saucepan of hot water, and kept in a receptacle half full of hot water while actually in use. The size may be laid on with a good-sized brush, such as that in Fig. 6, and must also be left for a day to set.

The varnishing must now be attended to. For this, a large flat brush will be required, and the varnish put on very evenly. If a new brush is employed, it is advisable to soak it in cold water and dry before using it, as this may in some degree prevent the bristles from falling out. While the varnish is drying, the door must be kept shut, and windows also, unless they look on to a grassy garden, from whence there is no fear of dust drifting in. Care must be taken not to use the room until the varnish is perfectly hard, as otherwise it will not stand even the smallest amount of wear.

A very inexpensive way of staining the floor

of a room is by the use of permanganate of potash. This, in the form of crystals, is to be had at any good oil and colourman's, and should be dissolved in boiling water, in the proportion (for a dark stain) of an ounce and a half to a gallon of water. A stick of firewood should be used to stir the staining up occasionally, to keep the colour even throughout. The boards will probably require two coats before the dye is sufficiently dark; and when fully dry, they must be wiped with a soft clean cloth, and linseed-oil rubbed in plentifully with a piece of flannel, working always with the grain of the wood.

The boards should then be polished with beeswax and turpentine. Cut up the wax, and pour the turpentine upon it. Leave it on the top of the kitchen stove until the wax is soft enough to be easily amalgamated with the turpentine, and so that the mixture can be made somewhat close and pasty. When cold, it must be well rubbed over the boards with a rubber made by tying together several folds of flannel. The polish must be well rubbed in, or accidents will be likely to occur from the slipperiness of the boards. This plan of staining a deal floor answers well, and the wood may be kept in good order by a weekly or fortnightly polishing with beeswax and turpentine, according to the amount of traffic across it.

Should the floor have been stained before, and so in need of renovation only, it must first be well dusted and cleaned, fresh staining must be applied to the shabby places, and the whole then polished as above described. Should the entire room require restaining, the new dye may be quite successfully used over the old, the boards being finished off in the usual manner.

Gilding.—The wood-work of a house is very frequently "picked out" with a few bands and mouldings of gold, which are considered to have a good effect in giving relief to an otherwise monotonous whole. For such a purpose as this it is of no use to invest in any of the many convenient gilding fluids recommended with a view of saving trouble. Though for a time they have a good appearance,

they are apt to turn black, and then look shabby in the extreme. With some slight experience in the art, the worker will find that gilding is a most fascinating occupation, but the utmost delicacy of workmanship is needed in order that a thoroughly satisfactory result may be obtained.

Gold-leaf is sold in books, each containing a quarter of a hundred leaves, and costing about 1s. 6d. per book. There is a less expensive kind of gold, which costs as little as fivepence; and, the leaves being thicker than the more expensive sort, it requires rather

less tender handling; but, being chiefly copper, does not keep its colour so well. The first thing to be done is to cover the portions of the wood-work to be gilded

with three coats of gold size. This is yellow in colour, and is to be had from any artist's colourman. The first difficulty connected with the process of gilding now arises, and consists in knowing when the size is in the right condition for receiving the gold-leaf. It must be in the stage technically known as "tacky"—that is, nearly dry, but still so sticky that the finger adheres when laid upon it. If too moist, some of the gold size will come away upon the finger, which it should not do when in the right condition. A second

and greater difficulty consists in the management of the gold-leaf, which is blown about by the least breath of air. The leaf has to be landed flat and smooth upon a gilder's cushion, which is of leather padded slightly, but pretty hard, upon a piece of board. The greatest care must be taken to be out of the slightest draught; then, if the book of gold-leaf be perfectly *dry*, on opening one of the leaves and blowing *very* gently under the gold, while the book is held just over the cushion, the book can be drawn away, leaving the leaf upon the leather. Most people do better, however, by introducing a gilder's knife, wiped dry and clean, its own width under one edge of the leaf, and thus lifting the leaf, and laying it down on the leather with a steady "drawing" movement. If the leaf does not lie flat and smooth on the cushion, a gentle blow from the lips perpendicularly down upon its centre, properly done, will smooth it out. The amateur



Fig. 20.—GILDER'S KNIVES.

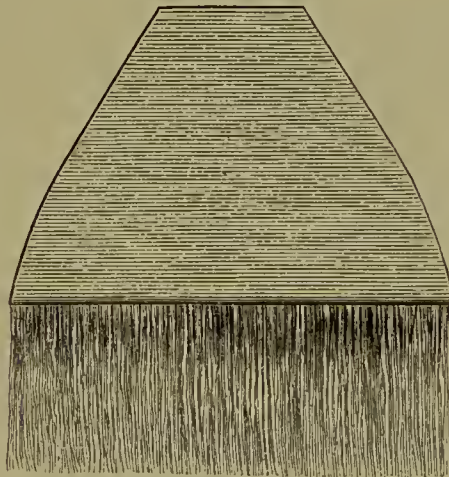


Fig. 21.—TIP FOR APPLYING GOLD-LEAF.

must expect to lose many leaves before skill is gained in manipulating such a fragile and delicate film of material.

Now take the knife, and cut the leaf on the cushion according to the size of the wood or moulding that is to be gilded. In cutting the leaf, the whole edge of the knife is pressed straight down across the leaf,

a little into the cushion, and a slight to-and-fro motion given, which divides the film and scarcely marks the leather, the edge not being sharp. To get the gold on to the wood, take the tip (Fig. 21), pass it lightly through the hair, and gently touch the gold with it, when the leaf will adhere. It should then be laid upon the portion to be gilded, more being applied till a good space is covered. The edges of two leaves may overlap without injury. The leaves are then pressed down gently, either with a pad of cotton-wool or with a gilder's mop or dabber, such as is shown in Fig. 22. The workman must remember that the greater the pressure he applies to the gold, the less brilliant will it be when finished, for—it can be understood—it becomes so much mixed up with the size that it is, as it were, impoverished by it. Brush off lightly any loose pieces of gold there may be round the work, leave it for a day, then varnish with a thin coat of clear size.



Fig. 22.—GILDER'S MOP.

In many cases the difficulty of handling gold-leaf may be avoided by the modern device of "transfer" leaves, which during the last year or two have come much into use. Each gold-leaf in the book is covered with a sheet of tissue-paper, one side of which (the

one next the gold) has been made slightly adhesive by being rubbed with cold wax; the whole book is then somewhat pressed together. The result is that the sheet of tissue being lifted, brings the gold-leaf with it; and being gently pressed against the gold-sized surface, leaves the gold behind it when withdrawn. Cutting is also saved, as the rest of the gold is left on the tissue, and can be applied to a fresh part of the sized design. These "transfer" books are sold ready prepared, and answer perfectly for all flat or slightly curved surfaces; only failing over sharp beadings or mouldings, to which the paper will not yield readily enough.

Painting Metal-work.—Fancy iron-work for indoor use, or that used for stoves or fenders, is usually painted black; and as a dead black is considered more artistic than the glossy paint, Judson's Artists' Black is generally recommended; but as it is rather costly, it is most suitable for small articles, such as lamp and flower stands. Aspinall's Enamel answers perfectly on iron-work, both in or out of doors. Brunswick Black is excellent, and partaking, as it does, more of the nature of a varnish than a paint, has the merit of drying very quickly; its average cost is about 1s. a pint, so it is far less expensive than most of the more fanciful preparations. For this, and especially for indoor work, a soft varnish-brush is the more convenient to use, "fitches" being needed if there are many stray corners and nooks and crannies to be coloured. For brass, tin, and other bright metals, an enamel has been recently introduced which has all the appearance of lacquer, and effectually prevents the article upon which it is used from becoming tarnished. It is to be had from the Patent Silico-Enamel Company, 97, Hampstead Road, N.W.; and is more especially useful when a house is to be left for a long time, and it is desirable that steel grates and fire-irons should not become rusty. The same company make a black enamel, chiefly used for bicycles and tricycles, which is valuable for any special cases where extra *hardness* is required, being nearly as hard as the stoved enamels, and which can be cleaned with paraffin, if necessary, without coming off.

DISEASES OF THE THROAT AND HEART.

In a preceding article, after pointing out the many important organs contained in the region of the chest, those affections were treated of which, in popular opinion, are more especially connected with that region. In the present one, those will be

described which, contained in the same great region of the body, affect the throat and heart.

Diseases of the Throat.—The term "throat" is somewhat comprehensive, for it includes not only

the palate, the uvula, and the tonsils, but also the larynx, the gullet, and the wind-pipe. It not infrequently happens that all these structures are affected simultaneously, the morbid process passing from one to the other. The disease may be confined to the throat, or it may be simply a part of a general constitutional disturbance, as in cases of scarlatina, diphtheria, and influenza. The throat is very liable to become congested or inflamed from exposure to cold, especially on coming out of a hot and crowded room, or after public speaking or singing. The organs, too, are especially apt to become relaxed as the result of a condition of general debility. Tumours and growths of various kinds affect the throat; and their exact nature, and even their existence, is often not detected until a skilled examination has been made with instruments designed for the purpose. Much attention has of late years been paid to cancer of the throat, and the terrible nature of that affection is now generally recognised. Consumption of the larynx is an almost equally fatal disease, and is not an uncommon complication of consumption affecting the lungs. The diseases of the throat are very numerous; they vary much in nature, and, from their position, are not very readily distinguished one from the other.

The general symptoms of throat diseases are pretty constant, although they vary in intensity according to the extent of the surface implicated. Pain and discomfort in swallowing are the most constant complaints. The pain may range from a simple sensation of uneasiness, to marked pulsation or throbbing extending down towards the throat and upwards in the direction of one or both ears. Tenderness is also very commonly complained of, the action of swallowing being attended with marked discomfort, so that food is taken with difficulty. Talking is difficult, and singing is impossible. Even the act of coughing may be so painful that the patient indulges in it as little as possible. The voice becomes thick and guttural or nasal in quality. The breathing may be obstructed, and the patient finds that he cannot lie down at night with anything approaching comfort. The breath may have an unpleasant odour, which is appreciable not only to the sufferer but to his visitors. The glands about the neck may be so enlarged that they are tender on pressure. In addition to these local signs, there is usually considerable constitutional disturbance. When the throat is acutely inflamed, the temperature may run up to 102° in a few hours, and the pulse may be found beating at the rate of 140 in the minute. The appetite is lost, there is headache, the patient is thirsty, and the bowels are confined. In the non-febrile forms of sore-throat there is often

general debility, and the patient feels disinclined for work of any kind.

There are one or two points in connection with throat diseases which it is important to remember. First and foremost, they are always serious in children, and they are very apt to be overlooked, from the inability of the little sufferer to express in words exactly what it is that ails him. The second point is, that sore-throat occurring persistently in the members of a household may be taken as an indication that there is something wrong with the drains, and this point should be thoroughly investigated, in spite of all assurances that their condition is perfect. Architects, surveyors, builders, and especially landlords, are always loth to admit that the drains are wrong, and will rarely admit the possibility of an escape of sewer-gas until some one dies of diphtheria or typhoid fever. Every pipe, and every pan, and every closet, should be disconnected or trapped, or the illness will continue, in spite of the visits of the doctor and any amount of medicine.

The treatment of diseases of the throat must be conducted on what may be called common-sense principles. Much may be done to prevent their occurrence by attention to hygienic principles. The rooms should, if possible, be large and airy; and even if they are not large, steps can easily be taken to ensure that they are well ventilated both by day and night. Many people are particular enough about having their windows open during the day, but hermetically seal them at night, when the necessity for fresh air is paramount. Attention to boots and clothing is of the utmost importance, and woollen things should be worn next to the skin. The food should be good in quality, and should be well cooked. Alcohol in the shape of beer, wines, or spirits, should be taken in the strictest moderation, and cigarette-smoking should be avoided. In the following list certain diseases of the throat are omitted because they are of rare occurrence, or because they are essentially unsuited for domestic treatment: whilst others are included because, although they are not primarily diseases of the throat, the throat symptoms are the main factors of importance in their consideration.

Sore-Throat.—There are many varieties of sore-throat; in fact, the term "throat," as has already been pointed out, is somewhat comprehensive, including as it does the pharynx, the tonsils, the palate, the uvula, and even the larynx.

The commonest varieties of sore-throat are the inflamed sore-throat and the relaxed sore-throat. The most frequent cause of inflammation of the throat is exposure to cold and wet. It is predisposed to by anything which lowers the condition of the general health, especially overwork in a vitiated

atmosphere. In inflammatory sore-throat there is more or less constitutional disturbance, the temperature in a few hours running up to 101° or 102° Fahr., with a corresponding increase in the pulse-rate.

The throat feels "sore," there is pain on swallowing, whilst talking and coughing are painful.

The voice is thick, guttural, or nasal in quality. Sometimes the breathing is affected, and this may be taken as an indication that the deeper structures are involved. A relaxed sore-throat depends often on the contamination of the air of the house with sewer-gas, and the frequent occurrence of sore-throat in members of a family should always lead to an inquiry into the condition of the drains. Should matters not be set right, diphtheria or typhoid fever may supervene, the patient suffering all the risks and inconveniences of a long illness.

In ordinary sore-throat the patient should remain indoors, and avoid cold air and draughts. The diet should consist of slops; and tabloids of chlorate of potash, or of chlorate of potash and borax, should be sucked incessantly. Gargles may be useful, but the tabloids are more efficacious and are easier of application.

In relaxed sore-throat a tonic system of treatment is indicated. Bark, a teaspoonful of the tincture in a wineglass of water, with port wine, are stock remedies. As soon as the prominent symptoms have subsided, change of air and plenty of outdoor exercise will do more than anything to accomplish a cure.

The so-called clergyman's sore-throat depends on a defective method of reading and speaking. It is not by any means confined to clergymen, for barristers, actors, singers, and even costermongers suffer from the same condition. The symptoms consist principally of an uneasy sensation in the upper part of the throat, with a constant inclination to swallow. At the same time the voice undergoes an alteration; there is want of tone, and difficulty is experienced in making it "carry." Clergymen often speak in a voice which is not natural; the use of an assumed tone in many instances being due to an unconscious imitation of some other preacher whom they admire, or under whom they have studied.

The best remedy for this condition is to take lessons in elocution. Drugs are not likely to do much good. The patient should place himself under the care of an actor or teacher skilled in "the management of the voice." This at once gets over the difficulty; and if his instructions are carried out, there will be no return of the affection.

Cigarette-smoking produces sore-throat of all kinds, and should be regarded with suspicion.

Thrush.—This is a disease of children, and is especially common amongst the children of the poor. It is due to inflammation of the lining membrane of the mouth, and to the growth of a fungus known as the *Oidium Albicans*. On examining the mouth, it will be seen that there are little white patches scattered over the tongue, the lips, and the insides of the cheeks. There is a good deal of heat and tenderness, and the child may have some difficulty in taking the breast. When the patches are detached, they frequently leave little ulcers, which heal with difficulty. Thrush is very often due to improper feeding and to the use of dirty bottles. When a child is brought up by hand, the greatest attention must be paid, not only to the milk or artificial food employed, but to all the utensils used. The bowels must be very carefully regulated, and a powder containing a third of a grain of grey powder may be administered with advantage from time to time. Thrush is very apt to give rise to diarrhoea, which may speedily terminate fatally. The attendance of a doctor is in all cases necessary.

Diphtheria.—Diphtheria is far too serious a disease to admit of domestic treatment. On the first suspicion of its visitation the best available medical attendance should be procured. It is essentially a contagious malady, the characteristic feature of which is the formation of a membrane in the throat, larynx, and windpipe. There is usually marked constitutional disturbance, the patient complaining of soreness of the throat and difficulty in swallowing. On examination it will be seen that there are whitish patches on the tonsils and adjacent parts. These tend to spread and coalesce, and rapidly form a thick membrane, which is dislodged with difficulty.

The course which the disease takes varies much, and at the best it is always attended with symptoms of extreme gravity. Unless the patient is isolated with the greatest care, it will spread, so that every member of the household becomes infected. Not only will good medical attendance be required, but skilled nursing. Sometimes the operation of tracheotomy has to be performed to prevent the unfortunate sufferer from dying of suffocation. Even when the patient survives the actual disease, he may suffer for weeks or months from diphtheritic paralysis, which may totally incapacitate him and prevent him from following his occupation. It is one of the most serious and fatal diseases from which humanity suffers.

Croup.—There are two kinds of croup—membranous croup, and false or spasmodic croup. True croup is one of the most terrible and fatal diseases from which children suffer. A membrane is formed

in the throat, which obstructs the passage of air, and excites a spasmodic condition of the muscles. There is good reason to suppose that croup and diphtheria are identical, but this is a point on which there is still some difference of opinion. There is little doubt that the disease is associated with the existence of unhealthy domestic arrangements, and with the contamination of the air of the house with sewer-gas. The symptoms are as a rule so characteristic that there is little chance of mistaking the nature of the case. The child usually goes to bed perfectly well, and awakes in the middle of the night struggling for breath and clutching at the throat in an agony of terror. There is a loud clanging cough, and each long-drawn inspiration is accompanied by a peculiar hissing sound. The expression is anxious, the eyes are suffused with tears, the face is congested, the whole body is covered with perspiration, and the voice is hoarse, and cannot be elevated above a whisper. There is fever, with thirst and headache, and there is pain about the throat. The paroxysms vary in duration, but usually last about half an hour. Sometimes the child coughs up pieces of membrane looking like wash-leather. This is usually followed by relief, but it is only temporary, and in a few hours there is another paroxysm. This is a condition which demands the immediate attendance of a doctor. Complications are very apt to ensue, and in a few hours bronchitis or inflammation of the lungs may set in. In "false croup"—or laryngismus stridulus, as it is technically called—the paroxysms are of shorter duration, and are often accompanied by peculiar twitchings of the hands and feet, which are not observed in the more serious form of the disease.

The treatment of membranous croup is a difficult matter, and requires much tact and judgment. In the absence of skilled advice there will be no harm in giving a teaspoonful of ipecacuanha wine in water. This will probably induce vomiting, which may have the effect of dislodging a portion of the membrane. Poultices of linseed meal should be applied to the throat, and steam may be inhaled from a bronchitis kettle. Liquid food should be given freely; and brandy-and-water, in teaspoonful doses frequently repeated, is useful in maintaining the strength. It often happens that some operative procedure, such as tracheotomy, or opening of the throat, has to be resorted to, in order to relieve the shortness of breath. The risk of contagion must be guarded against, and the child should as far as possible be isolated, only one or two people being admitted into the sick-room.

Even in cases of spasmodic false croup the attendance of a doctor is absolutely necessary. One of the best remedies is bromide of potassium, and in the

case of young children ten grains may be given in a little milk every hour or every alternate hour. Dr. Ringer speaks highly of the value of cold sponging. He says, "Cold sponging twice or thrice a day, according to the severity of the case, will scarcely ever fail to modify the disease, however severe the attack. So prompt is the relief of cold sponging that a child subject to hourly attacks during the day, and to ceaseless attacks at night, is frequently instantly relieved from them. At all events, a decided improvement always occurs, and the intervals between the attacks are much prolonged. It rarely happens that the strident crowing resists this treatment more than two or three days. The surest and speediest way of arresting a paroxysm of crowing breathing is to dash cold water over the child. At the outset of a paroxysm cold water should be dashed on the child's face; and if this does not at once arrest the attack, water should be applied to the whole body." If the gums are hard, tender, and swollen, it may be just possible that they are the cause of the irritation, and they should be lanced without delay. Worms are a fruitful source of all spasmodic affections, and they should be expelled by a three-grain calomel powder, followed by an injection of salt-and-water or infusion of quassia into the bowel. Flatulence, colic, and indigestion are common sources of irritation, and the diet should be carefully regulated—"predigested" food (that is, milk and beef-tea digested with "Zymine") being given if necessary. Croup in any form is a serious complaint, and is quite unsuited for domestic treatment, the attendance of a medical man being absolutely necessary.

Quinsy.—By quinsy, or tonsillitis, is meant inflammation of the tonsils. This affection is usually met with in young people, especially in spring and autumn; and one attack increases the liability of another. The symptoms usually set in quite suddenly, the temperature in the course of a few hours running up to 104° or 105° Fahr. The pulse is quick, the skin is hot, there is headache, and the tongue is covered with a thick white fur. The throat feels sore, and it is difficult to open the mouth to any extent. The tone of the voice is altered, and there may be temporary deafness. The throat is frequently swollen externally; and if the mouth can be opened sufficiently, the tonsils will be seen to be greatly enlarged, meeting perhaps in the middle line. This condition, if not promptly treated, may last a week or more, the pain and difficulty in swallowing steadily increasing in severity. Not infrequently an abscess forms (it may be on one side, or it may be on both), and no relief is obtained until this bursts and the matter is discharged. It is

a very disagreeable complaint in every way, and one not unattended with danger.

If the nature of the illness is recognised at the very commencement, much may be done in the way of treatment. Aconite is by far the best remedy for subduing the feverish symptoms. A tabloid triturate of aconite containing one minim may be taken every ten minutes for the first hour, and subsequently hourly for six hours. Another good way of giving aconite is to put ten drops of the tincture in half a tumblerful of cold water, and take a teaspoonful every hour for twelve hours. The immediate effect is that the temperature falls two or three degrees, the pulse becomes quieter, the skin is bathed in moisture, and the patient feels in every way more comfortable. It sometimes happens that the progress of the complaint is completely arrested, and the patient experiences no inconvenience after the first few hours.

Should the nature of the complaint not have been recognised, or should the aconite not be at hand, salicylate of soda will be found serviceable. The dose is ten grains every four hours, and it may be given dissolved in water, or in the form of tabloids containing five grains in each. Another excellent remedy is the ammoniated tincture of guaiacum, a small teaspoonful being given in milk three times a day.

During the whole progress of the complaint the patient must be kept in bed, and fed on milk diet. Small pieces of ice to suck will be found both grateful and beneficial. The convalescence is speedy, but the tone of the system will want improving by the administration of iron and quinine, with perhaps a visit to the sea-side.

The complaint is a serious one, and the attendance of a doctor will be necessary, especially should an abscess form.

Hay Fever.—Hay Fever is a disease which has been definitely recognised for about sixty years. It is sometimes called hay asthma, and in Germany is known as the "Frühsummer Katarrh," or early summer catarrh. In the majority of cases it is excited by the inhalation of pollen of grasses.

The grasses most productive of hay fever are the sweet-scented vernal grass (*Anthoxanthum odoratum*), the rye grass (*Lolium perenne*), and the sweet-scented soft grass (*Holcus odoratus*), and it is found that the fresh plants are less potent in their effects than the hay made from these grasses. Many years ago Vogel discovered that some grasses owe their odoriferous properties to the presence of benzoic acid, and it is a well-known fact that the vapour of this substance is capable of producing violent paroxysms of cough and sneezing, accompanied by

irritation of the fauces. It is a curious circumstance, too, that amongst the English branch of the Anglo-Saxon race grasses are the most frequent causes of attacks of paroxysmal sneezing, whilst with Americans the pollen of the rose and some other plants is regarded as being more potent. The frequency with which "rose fever," "rose cold," or "rose catarrh" prevails in the United States is well known, whilst in India the affection is often attributed to the blossom of the mango, which flowers in February or March, and exhales an odour not unlike that of pure terebene. In Great Britain, too, it is by no means rare to meet with people who are affected by other pollen than that of grasses. In one case the pollen of the common daisy (*Bellis perennis*) gave rise to more inconvenience than that of any other plant. A lady who could never remain in a room with even a single stalk of Indian corn without being seized with shortness of breath, on one occasion when abroad suffered from a severe attack of asthma from going accidentally into a room where a mattress stuffed with the leaves of Indian corn was being shaken. In another instance it is recorded of a man that he could never pass the shop of a certain ropemaker in his native town without suffering from dyspnoea, excited presumably by the dust from the flax. Cullen refers to the case of a man who was seized with fits of sneezing whenever rice was threshed in the neighbourhood of the house, whilst Trousseau tells us that he himself always had asthma if he remained for even a few minutes in a room with a bouquet of violets. The power of ipecacuanha dust to produce in certain susceptible persons attacks of shortness of breath has long been recognised.

A doctor records the case of a patient in whom a linseed-meal poultice provoked the symptoms, whilst in another instance the smell of mustard was the exciting cause. Powdered colocynth may have a similar effect, and an epidemic of sneezing which occurred in a house was traced to the use of bitter apple, which had been dusted over the carpets and other articles as a preventive of moth. A medical student found that the dust from a clean pocket-handkerchief always excited in him paroxysms of sneezing, to which he was subject, and he was so assured of this that he gave orders that his handkerchiefs should never be starched. The coryza induced by preparations of iodine made with methylated spirit is well known. The case is recorded of a lady in whom asthmatic attacks were induced by scents of all kinds, and a sea captain engaged in the guano trade was so severely affected by the emanations from this substance that he had to relinquish his occupation.

Under the term "Hay Fever" are included similar attacks induced by the exhalations from cats, dogs,

horses, and other animals. Hydo Salter, in his interesting work on Asthma, gives detailed notes of several cases in which the shortness of breath was induced by exposure to the effluvium of various animals, his list including not only cats, dogs, and horses, but wild beasts, cattle, guinea-pigs, rabbits, and hares. A patient, the proprietor of a well-known equestrian establishment, had his asthma brought on by the presence of horses, so that he was continually asthmatic. He had no suspicion of the real cause of his suffering till he made his fortune and retired from business, when his old symptoms departed, only to return if by chance he visited his old haunts. Salter also tells the story of a country clergyman who was always rendered asthmatic by the neighbourhood of a hare or hare-skin. If by chance he met a man who had been poaching, he at once detected him. When this gentleman was a boy, studying with a private tutor, a fellow-student, as a practical joke, put a dead hare under a sofa on which he was sitting, and he immediately had a severe attack of his complaint.

The symptoms of hay asthma are in the main those of violent catarrh, including itching of the nose, congestion and swelling of the eyelids, watering from the eyes, and copious discharge from the nostrils, attended with much sneezing, irritation of the throat, tightness at the chest, shortness of breath, cough, and expectoration. These symptoms vary in intensity, and are usually aggravated in the hay season—that is, towards the middle or end of June.

One of the best remedies for hay fever and sneezing is cocaine. It is employed in the form of tablets, one or more being moistened with the tongue, and then pushed up as far as possible into the nostrils. A spray or solution of cocaine is also useful.

Pungent inhalations of all kinds are useful in cutting short the attacks of sneezing. Strong ammonia, carbolic acid, camphor, and iodine, may all be employed for the purpose. The pungent smelling-salts sold in the shops often answer admirably, but the palm must be given to iodine. It is usually ordered in the form of the liniment, the patient being told to carry a small bottle in his pocket, taking care, of course, that it does not escape, and to smell it once or twice on the onset of the symptoms. Pure terebene, pinol, and eucalyptine are useful to inhale, and are preferred by many. A few drops of chloroform placed in the palm of the hand and inhaled during the attack will sometimes cut it short. In some cases of hay fever inhalations of creasote are useful. The best strength is ten drops in a pint of hot water, the steam being inhaled for a few minutes. A popular remedy is essence of camphor, a saturated solution in alcohol, two or three drops being taken

on sugar every ten minutes. Inhalations of camphor are also useful. Tobacco-smoking will often answer admirably. During the hay asthma season, the sufferer should regularly smoke a good cigar as a preventive the last thing on going to bed, or, better still, when he is in bed. The sedative influence of the cigar will often insure a good night's rest, but the powerful depressing action of strong tobacco may be necessary to cut short the paroxysm when once established. Some patients prefer the Indian tobacco (*Lobelia inflata*) to the ordinary cigar or pipe. Nitre papers burnt in the bedroom may prove useful. The efficacy of Himrod's Powder is so generally recognised as to call for no comment. It, like its congeners, the Green Mountain Cure, Bliss's Cure, and their numerous imitators, probably contains nitre, lobelia, and stramonium. Coffee is not uncommonly employed to cut short attacks of hay fever, but to be of use it must be black and strong, and should be taken quite at the onset of the paroxysm. It is so valuable a remedy that the hay asthmatic should never drink it as a beverage, but should reserve it strictly as a medicine. Effervescing citrate of caffeine is often taken with advantage. A nasal douche or spray of sulphate of quinine is said to be useful in hay fever. Hazeline, an aqueous distillate prepared from the fresh bark of *Hamamelis virginica*, is a capital remedy both for hay fever due to pollen, and simple sneezing. When snuffed up the nostrils, it aborts the attacks; and when taken internally, in twenty-drop doses three times a day, it lessens the excitability of the mucous membranes of the nose and respiratory tracts.

When the attacks are attended with itching or irritation of some particular spot or region, the local application of aconite liniment or aconitia ointment may at once give relief.

Heart Disease.—Diseases of the heart, and of the circulatory system generally, are of very common occurrence, although not unfrequently they escape detection until they are beyond the reach of treatment. Many of these affections are merely functional—such as the palpitation arising from indigestion or excessive smoking—whilst others are organic, and are due either to morbid changes in the muscular substance of the heart itself, or to some deposit on the valves of the heart, or obstruction at its orifices. They may be primary, or may depend on some general systemic change, such as Bright's disease, which affects all the vital organs and tissues of the body. Very commonly heart disease follows in the wake of fevers, such as scarlet fever, and especially rheumatic fever. The affection may be only temporary, but too often it is permanent, and incapacitates the patient for active employment during the remainder

of his life. Heart disease attacks not only adults, but children as well; in fact, many forms are congenital. A child is often brought to a doctor, who finds the patient suffering from an affection of the heart, the very existence of which had for years escaped the notice of the parents. It is a matter of grave importance, for in all probability it alters the whole scheme of life which had been mapped out for the child. If a boy, he is ineligible for any of the public services, and is certainly quite unfitted for any career necessitating active work or involving much anxiety. Parents often reproach themselves, and are apt to fancy that the ailments of their children are hereditary, and that indirectly they are to blame; but there is no reason to suppose that this is the case in affections of the heart. Moreover, the parents have no reason for blaming themselves for want of care or attention to their offspring, for the disease comes on so insidiously that it is well-nigh impossible to detect it. A child may pass through a severe attack of acute rheumatism without the exact nature of the illness being detected, for the occurrence of joint affections—which in adults is the characteristic sign of the disease—is often absent. It is only when the heart is involved, that the real nature of the antecedent attack is recognised.

Fatty degeneration of the heart is another affection of that organ which frequently escapes recognition. It is a common condition of advanced life, and especially of advanced life attended with certain diseases or morbid tendencies—such as chronic bronchitis, arterial degeneration, or gout. Enfeeblement from fatty degeneration is one of the recognised causes of sudden death, and it is an important fact that the sudden termination may occur without warning in those in whom the symptoms are not sufficiently advanced to give rise to the existence of any positive indication of the change which is slowly taking place.

The outlook in cases of heart disease is not very hopeful, but still much may be done in the way of treatment. In functional palpitation the removal of the cause will often speedily effect a cure. For example, the irregular action of the heart may depend on the non-assimilation of food by the stomach, and this in turn may be due to deficient mastication caused by the absence of teeth. The patient, under the advice of his physician, and acting on this hint, goes to a dentist, who recommends a set of false teeth. For a long time the patient is obdurate, and objects to the loss of time and the trouble which it of necessity entails, but ultimately gives way, and places himself unreservedly in the hands of his advisers. A complete denture is fitted, and in a few months, much to the patient's surprise, all his symptoms have disappeared. Even when the

palpitation is not due to any mechanical cause, relief may often be afforded by the administration of drugs. *Digitaline*, the active principle of the common foxglove, is often employed for the purpose; and physicians are now acquainted with many drugs which belong to this group, and are efficacious when judiciously employed. Sometimes *digitalis* itself is given; whilst at others, and in certain states of the system, *strophanthus*—a drug recently introduced from Africa—or the Lily of the Valley, the action of which has been investigated by Russian observers, will be found preferable. The drug to use, with the exact dose and preparation which should be given, is of the utmost importance, and can only be determined after a careful investigation of the particular case. The selection of the appropriate remedy, and its application in practice, constitutes the highest art of the physician.

Angina Pectoris.—Angina Pectoris is not, strictly speaking, a disease of the heart, but a morbid condition due to an unusual and excessive contraction of the blood-vessels. It is often associated with heart disease, but quite as frequently occurs as a distinct affection. It has been known since the year 1768, when it was first described by the celebrated Dr. Heberden. It is a frequent cause of death, but it constantly happens that the symptoms, although perfectly characteristic, are overlooked. It is not often met with amongst the labouring classes and those who lead an active outdoor life, but attacks chiefly those who are renowned for their intellectual endowments. Some of the most distinguished writers of the present century have died from its effects. It is far more common in men than in women; in fact, it is rare to meet with a well-marked case in the female sex. The disease is essentially paroxysmal in nature, coming on in distinct attacks, while in the intervals the patient may feel perfectly well. The slightest exertion, however—such as walking or driving in the face of the wind, or stooping down—may excite the paroxysms. In severe cases it may be impossible to walk a hundred yards without pain and a sensation of impending death. It is a grave complaint, and it is impossible to overestimate its gravity. The patient may die at any moment, and death has frequently occurred in a first attack. The symptoms are perfectly characteristic, and are unmistakable to any one acquainted with the complaint. There is a sudden attack of pain in the chest, which usually extends to one or other shoulder, and then down the arm on the same side; the pain is so intense that the patient stops suddenly, and is unable to move even a step. The face is blanched, the pulse is small, or perhaps unperceptible, and the body may be bathed in perspiration.

It is not only that the pain is severe, but there is a terrible feeling of suffocation, as if the chest were being held in an iron grasp. The patient is unable to speak, but stands perfectly helpless, expecting that every moment will be his last. The paroxysm may pass off in a few moments—which seem an age—or in severe cases may last half an hour or longer. These attacks may come on at long intervals, or there may be half a dozen or more in the day, the susceptibility being so great that the patient is afraid to make the slightest movement. The duration of the disease varies much in different cases, the result depending much on the mode of treatment adopted. It is not of necessity fatal, and in skilled hands the life of the patient may be prolonged for many years. A few years ago it was regarded as a hopeless complaint, and no effort was made to afford relief; but, thanks to improvement in the methods of treatment and the acceptance of modern views, the outlook is now far less serious, and the sufferer is justified in looking forward to the prospect of ultimate recovery.

Angina pectoris contracts the blood-vessels, and drugs have been discovered which have a contrary effect and dilate them, giving almost immediate relief to the pain and suffering. The chief drugs belonging to this class are nitrite of amyl, nitrite of sodium, and nitro-glycerine. A great deal depends on the mode in which these drugs are used, and in unskilled or unpractised hands they will do more harm than good. If the patient wishes really to recover, he must place himself in the hands of a physician who makes a special study of the subject. A mere casual prescription will do no good, and he must be prepared to undertake a course of treatment, and to make the rules laid down his guiding course in life. A great many people object to the constraint of treatment, and complain that it interferes with their social engagements; but a person who suffers from a disease of the gravity of angina pectoris must not look too critically at the price he pays for the maintenance of life. It is a great thing to have a remedy which is really efficacious, and he must be prepared to put up with any temporary inconvenience which may be necessitated by the exigencies of his case. It is from failure to recognise the importance of this essential principle that life is too often ruthlessly sacrificed. A patient, as soon as he learns that there is a remedy for his complaint, too often expects to be cured right off, and fails to recognise the fact that his active co-operation is essential if the cure is to be anything like permanent.

Aneurism.—By aneurism is meant a local dilatation of an artery, leading to the formation of a tumour containing blood. The most common form of aneurism is aneurism of the aorta, the large blood-

vessel leading from the heart. It is a very serious disease, and, if not properly treated, endangers life. It usually arises from a strain, and is especially common in those who habitually lead a sedentary life, but from time to time indulge in violent exercise, such as riding or mountain climbing. The symptoms are often obscure, and the real nature of the disease may for a long time escape recognition, the patient's sufferings being ascribed to neuralgia, rheumatism, or some other comparatively innocent complaint. Aneurism of the aorta, from pressure on the larynx and adjacent parts, often gives rise to cough, difficulty in breathing, and a feeling of suffocation. The sufferer complains of palpitation, and soon finds that he is incapable of any active exertion, or even of following his ordinary avocations. He postpones the evil day as long as possible, but ultimately finds it necessary to obtain medical advice. Even at the best his prospects of recovery are not great, and he must be prepared for a long period of absolute rest and inactivity. Without treatment the sac of the aneurism may burst at any moment, the patient dying from shock or hæmorrhage. Fortunately, however, it is not an altogether incurable complaint. Absolute rest in bed and the administration of certain remedies may effect a cure. Even when these measures fail, a surgical operation may be the means of saving life. It is a complaint which is essentially unsuited for domestic treatment, and the friends of a man who is suspected to have aneurism should insist on his obtaining the best advice possible without delay. Time is an important element in the treatment; and the sooner the patient places himself in the hands of a skilled physician, the better will be his chances of recovery.

Palpitation.—Palpitation of the heart is a most distressing complaint, and there are few people who have not suffered from it at one time or other. The heart beats unequally, and often in a manner to cause the patient the greatest alarm. It may come on with exertion only, but many people suffer from it at night, or on attempting to lie on the left side. There is rarely much pain, but there may be distressing shortness of breath and inability to sleep. The pulse, too, is weak and irregular, and can often be counted only with difficulty. Palpitation occurs more frequently in women than men, and is common in people of a nervous temperament. An attack is frequently brought on by emotional disturbance, and its occurrence is favoured by anything which lowers the general state of the system. It is far more commonly due to dyspepsia and flatulency than to heart disease. In men it is frequently caused by excessive smoking. The patient will probably plead that he does not smoke

much, and that may be true, but in people who are susceptible to the action of tobacco, a single pipe or cigar, or even a couple of cigarettes, will upset the digestion and cause an irregular action of the heart. It is often difficult to say positively, without a thorough medical examination, whether there is organic disease of the heart or not. The following table may, however, be of some use in forming an opinion:—

PALPITATION DEPENDING ON DISEASE OF THE HEART.

1. More common in men than in women.
2. Usually comes on slowly and gradually.
3. Constant, though more marked at one time than another.
4. Often not much complained of by the patient, occasionally attended by severe pain extending to the shoulders.
5. Beat against the chest usually stronger than natural; sometimes remarkably increased, heaving and prolonged; at others irregular and unequal.
6. Lips and cheeks often blue; countenance congested; dropsy of the lower extremities common.
7. Palpitation increased by stimulants and tonics, but relieved by rest.

PALPITATION ARISING FROM OTHER CAUSES.

1. More common in women than in men.
2. Usually sets in suddenly.
3. Not constant, having perfect intermissions.
4. Usually much complained of by the patient; readily induced by mental emotion; and often accompanied by pain in the left side.
5. Beat neither heaving nor prolonged; often abrupt or knocking, and accompanied by fluttering sensation at the pit of the stomach.
6. Lips and cheeks never livid; countenance often pale; dropsy absent, except in extreme cases.
7. Palpitation increased by sedentary occupations, relieved by moderate exercise, and by stimulants and tonics.

The treatment of palpitation will depend on its cause; and until this is clearly made out, nothing can be done. When it is due to general debility, a course of Fellows' Syrup of the Hypophosphites is useful, a teaspoonful being taken three times a day in water. Coca wine and Burrough's Beef and Iron Wine are useful as adjuncts. When smoking is suspected to be the cause, it should be absolutely discontinued for at least six months. There is not the slightest danger in knocking it off entirely—in fact, it is essential to do so. When indigestion is the cause, a couple of pepsine tablets, or a teaspoonful of Kepler Extract of Malt, should be taken after each meal. When it is due to heart disease, the advice of a physician should be taken, and carefully followed. The remedies usually employed in these cases are *strophanthus* and *digitalis*—both of which have to be given with care, and require watching. A belladonna plaster, six inches by four, should be applied over the region of the heart, and should be worn for some weeks. It will have to be warmed for a few minutes in front of the fire, to make it stick properly; and it is a good plan to wash the skin thoroughly with tepid water and soap, so as to remove all traces of perspiration. The plaster must be applied smoothly, or it will wrinkle, and is then very uncomfortable. It is a good plan to give up

tea entirely, and to take cocoa, coffee, or milk. Stimulants should be used in the strictest moderation, and at meal-times only.

Flushing.—Flushing of the face is often a source of annoyance and inconvenience, especially to young ladies. It is natural, and certainly requires no treatment. It is usually the result of nervousness, and passes away soon enough when more experience is gained in the ways of the world, and especially of what is called society. But there is another form of flushing which occurs in middle life, often for the first time, and requires more careful consideration. It is met with not uncommonly in ladies of from forty-five to fifty years of age. The attacks come on quite suddenly, and often without any exciting cause. They are not confined to the face, but spread rapidly over the neck and chest, and may be followed by profuse perspirations. The flushing is of short duration, and may occur many times in the course of the day. Sometimes it is the result of dyspepsia, but it may occur without any derangement of the digestive organs. Not infrequently these flushes are associated with considerable nervous depression, and the patient may be extremely despondent. This condition is sometimes the result of overwork, worry, and mental anxiety.

The treatment should be directed to the removal of the cause of the flushings, rather than to their cure. If there is dyspepsia, a tonic containing gentian, bicarbonate of soda, and a little sal-volatile, may accomplish all that is necessary. If there is general debility, iron and quinine will probably answer better than anything. When there is great depression of the nervous system, a teaspoonful of Fellows' Syrup of the Hypophosphites will brace it up. As a temporary measure, benefit will sometimes be experienced by smelling aromatic vinegar or some powerful stimulant. Exercise should be taken as much as possible in the open air, and the diet should be carefully regulated.

Cramp.—Cramp is a painful condition due usually to spasmodic contraction of the muscles. It arises more frequently from fatigue and over-exertion than from any other cause. A person whose general health is not good, and who is not accustomed to much outdoor exercise, hurries to catch a train, and is suddenly seized with cramp in the muscles of the back or legs. In some cases attacks of cramp in the arms have been known to follow excessive pianoforte practice, and needlewomen and copyists often suffer from the same cause. It frequently happens that young ladies who dance too persistently at their first ball have an attack of cramp in the legs on their return home. Proper

training will enable a person to accomplish without fatigue an amount of work which would otherwise be impossible.

Cramp in the stomach is due, in most cases, not to contraction of the muscles of the abdominal wall, but to distension of the intestines, and colic. The complaint known as "writer's cramp" is a much more complex condition, and is the result of certain changes in the nerve centres; and the same may be said of pianoforte player's cramp, violinist's cramp, and other diseases incidental to particular occupations. When the cramp is due to excessive muscular exertion, rest in bed is the best remedy. Sometimes the pain is so great that the patient finds he cannot undress himself. When the pain is very severe, a hypodermic injection of morphia is often given in the arm, the needle being made to pierce the clothes. In addition to rest in bed, a hot bath will be found useful, and massage carefully performed by a skilled operator will quickly relieve the pain. Arnica taken internally has the reputation of relieving the pain produced by excessive muscular exertion. It should be taken in drop doses of the tincture every quarter of an hour for an hour, and then hourly until relief is obtained. When there is cramp in the abdomen, the following draught should be taken:—Bicarbonate of potassium fifteen grains, aromatic spirits of ammonia one drachm, tincture of nux vomica ten minims, tincture of ginger fifteen minims, spirits of chloroform twenty minims, syrup of oranges one drachm, and compound infusion of gentian two ounces. This should be repeated in an hour's time if necessary, and should be followed by two five-grain compound colocynth pills. A large hot linseed-meal poultice or a mustard leaf is useful as an accessory.

Fainting.—The occurrence of an attack of fainting or syncope is not uncommon in young people whose health is not very robust. The immediate cause of the loss of sensibility is failure of the heart's action, and this condition may be excited by almost anything—either mental or physical—which powerfully impresses the nervous system. For example, the receipt of bad news, or the unexpected arrival of a friend or relative, may be the starting-point of the attack, whilst it not uncommonly arises from the sight of some object which is disagreeable or repulsive. Very delicate people sometimes faint at the sight of a frog or a mouse, or even a black-beetle; whilst the mere suggestion of an accident will drive the colour from their faces and cause them the greatest distress. The mention of blood unpleasantly affects many people, who are usually but little prone to faint. Immunity from fainting is not always associated with physical

strength. This is seen amongst medical students, for it not uncommonly happens that men who in their college days were distinguished as athletes feel very uncomfortable at their first operation. This, it must be admitted, is exceptional, and speaking generally any measure which improves the general tone of the system lessens the undue susceptibility to syncope. Many people faint only exceptionally, when they have been some hours without food, or have been engaged in anxious trying work, which has rendered them heedless of their physical requirements.

It is not easy to describe a fainting fit, or to give an account of the sensations experienced by the sufferer. Many people say that to them fainting is not disagreeable, whilst others admit that they experience considerable distress, not only during the attack, but just before "going off." A strong-minded woman makes perhaps a desperate effort to keep from fainting, and the endeavour to maintain her composure and prevent a scene may exhaust her more than if she actually became unconscious. When a person faints, the first feeling is usually one of discomfort or distress; this is followed by a sensation of nausea, then by giddiness, after which there is a blank before the eyes, everything swims round and round, and consciousness is lost. The observer simply sees that the patient suddenly turns pale and falls down insensible. The face is ghastly white, the hands and feet are cold, the skin is moist, the teeth chatter, and there is no pulse to be felt. This condition fortunately rarely lasts long. The shock of the fall, and the advantage derived from assuming the horizontal position, facilitate the establishment of circulation, and in a few minutes the heart begins to beat—slowly at first, and then more forcibly and quickly—until the pulse is again felt at the wrist, the colour returns to the cheeks and lips, and the patient with a long-drawn sigh regains consciousness.

There are one or two other complaints from which an attack of fainting has to be distinguished. First there is hysteria. In hysteria the patient usually laughs, or cries, or sobs, or endeavours to attract sympathy; and during the attack the face is flushed and not pallid, the skin is hot and not cold, and the pulse can be felt without difficulty. A person who is habitually hysterical may have a fainting fit, but there is no difficulty in distinguishing between the two conditions. Epilepsy is much more liable to be mistaken for fainting. Usually in epilepsy the limbs are convulsed, the face is flushed, and there is foaming at the mouth, with perhaps a bitten tongue. Fainting may be associated with heart disease; and when an attack occurs suddenly, without any very apparent cause, in a person whose health is usually fairly robust, it would be well to get

medical advice, in order that a thorough investigation and examination may be made.

The treatment of a person in a fainting fit is simple enough. The head should be placed as low as possible. This is done, not by putting the patient on the floor or on a couch, but by seating him in a chair, and bending the head down until it reaches the level of the knees. This position relieves the heart, and facilitates the supply of blood to the brain. Water should be sprinkled on the face and forehead, and the palms of the hands may be beaten with a moist towel. Smelling salts may be inhaled, or any other pungent substance which may be at hand. A teaspoonful of sal-volatile in a wineglassful of water is a useful stimulant; or twenty drops of chloric ether in water may be given. Brandy is often administered, but it is not so useful as the diffusible stimulants just mentioned.

Steps should be taken to improve the general health. If the patient is pale or anæmic, iron is the best remedy, and it should be administered freely. Ten drops of the tincture of perchloride of iron, or twenty drops of dialysed iron, may be given in a little water three times a day after meals, and this treatment should be kept up for some weeks. If the patient is losing flesh, cod-liver oil in tablespoonful doses twice a day will be found useful. In addition to these medicinal measures, exercise must be taken in the open air. It should be taken systematically, and must assume some definite form, such as walking, riding, lawn tennis, or their equivalent. A cold sponge bath in the morning is invigorating, and should not be omitted, whilst dumb-bells form a useful adjunct. These simple precautions will do more than anything to give tone to the system and avoid a recurrence of the attacks.

ECONOMY IN THE KITCHEN.

THERE are perhaps few words in the English language less understood than the word Economy. Many persons associate the idea of economy with meanness, or, to use perhaps a more expressive word, "stinginess;" whereas the real facts are that the truest economy often goes hand-in-hand with the greatest hospitality and liberality. There is no man so really mean as the selfish man: waiters at restaurants know this, to their cost.

It is also a great mistake to suppose that economy only concerns persons with small incomes, while want of economy is confined to those who keep up large establishments. In fact, the general rule is the other way; and there is probably more waste in the houses of the poor than in the houses of the rich. In a well-ordered household, where there are a considerable number of servants, as a rule everything is turned to account. The most shocking and glaring instances of want of economy are generally to be found in those houses where the master or mistress is just well enough off to keep one servant, but are not sufficiently well off to keep a good one. Ladies who can keep a general servant known as "thorough," who expects wages of at least twenty pounds a year, are probably more economical than those who can only afford to keep a rough servant girl of all work—sometimes a "gal" from the workhouse. The ravages committed by these unfortunate creatures baffle description. In early life they have been accustomed to see tea bought by the ounce and coals by the half-sack. When these unfortunates obtain a situation in a household where perhaps the income

does not exceed £200 a year, their mind—or what they call their mind—gets unhinged at what to them seems fabulous wealth. They unconsciously think that a ton of coals will last a lifetime, and even tea in a 2-lb. packet causes them to think that a spoonful or two, more or less, makes no difference.

What *is* economy? We will not enter into a long detailed definition, but give practical instances as we go along, endeavouring to make our remarks as general as possible, and equally applicable to Park Lane and Drury Lane.

The Fire.—First the cook, kitchen-maid, or someone, comes down to light the kitchen fire. Economy here consists in not *wasting* the coals. It is no want of economy to have a good fire on a cold day, but it is a sad want of economy to have a roaring fire on a hot day, when you don't want it. This illustrates the distinction between economy and meanness. When people are fairly well off, and the weather very cold, to refuse to keep in a good fire is simple meanness; so also to give a guest bad sherry with his dinner, because you are ashamed to give no wine, and yet give him no fire in his bedroom, which probably will not cost sixpence. Economy and hospitality would be no wine at all, but a glass of wholesome bitter beer and a fire in the bedroom.

But we are in the middle of lighting the kitchen fire. The first thing to consider is the ashes. To throw up the ashes just as they are, so that the fire won't burn, would be stupidity; to throw them all

away would be waste; to sift the cinders and burn them, and throw away only the dust is, of course, the proper course to take, and for this purpose we really want a sifter. These directions may seem very obvious; but how many houses possess cinder-sifters in every room? We refer to the little hand-sifters, which cost ninepence, and very often save sixpence a week. The old-fashioned plan of sifting cinders was a large box in which the cinders were placed and shaken. This was left to servants, and was used about as often as the "bottle-brush." But these "cinder-shovels," as they are generally called, are extremely useful in the kitchen and other rooms, besides being very economical. Very often, shortly before lunch or dinner, we want a clear fire for grilling. Suppose there is a little delay; if you put on fresh coals, it is very difficult to say how long it will be before the fire burns clear. But with a cinder-shovel you can throw up the cinders, and keep a clear fire in a long time; and cooks would do well to reserve the ashes for these occasions. What they too often do is as follows:—First of all, they get the fire clear too soon; then they let the fire get too low; then they get frightened, and put on coals. When the proper moment for grilling arrives, you will find the cook, with a flushed and irritable face, getting the fire ready by what she calls "taking the top off" with the tongs, which causes the whole house to smell as if you lived unpleasantly near to a gas-works.

During the day economy in coals is really a question of common sense. To have a roaring fire when there is nothing to cook, is folly. When there is a *large* joint to cook, it is equal folly not to have a roaring fire. It is perhaps at the close of the day, when the late dinner or last hot meal is over, that common-sense economy begins. Then is the time to clear up the kitchen grate, to throw up the ashes, sweep the hearth, and remove the dust. You will be thankful for it in the morning. Nothing is so demoralising to a cook as to come down to a dirty grate, all dust, ashes, and dirty saucepans. Servants are too often apt to throw half a scuttleful of coals on the kitchen fire about half an hour before they go to bed. This is absolute waste, except when it is done on purpose on a frosty night, to prevent the pipes freezing.

Milk.—Next we will suppose, the fire being lit, that the cook makes preparations for breakfast. The first thing she should do is to see if there is any milk left from the day before, and, if there is, put it on to boil at once, as it will do for the coffee or cocoa at breakfast. In hot weather it should be boiled overnight. If persons have tea, for that they require the fresh milk; and what is left from breakfast can be added and boiled up with the other, and be used for

making any sort of milky pudding. In any case do not let the milk get sour. Want of economy is shown when you hear—

"If you please, mum, the milk's sour."

"All right, Mary Ann; it will do for the cat."

But it is probable the cat will smell the saucer, and turn away with disdain. As Ude, the famous cook, observes: cats and servants resemble each other in one respect—"enjoying what they *pilfer*, but very difficult to please with what is *given* to them." Though we do not know why even a cat should be expected to enjoy sour milk.

Scraps.—While seeing what milk was left over from the day before is a good opportunity to notice what stale pieces of bread have been left; also to empty out the crumbs of the bread-pan, which ought to be *cleaned out every morning* with a dry cloth. Suppose we find a lot of crusts too stale to be eaten. Put them on a plate, and bring them into the kitchen. Suppose, also, we find that over a pint of milk has been left. In houses where economy is practised a bread-pudding follows as a matter of course. But, alas! in many houses the milk turns sour, and the crusts are thrown away. Think for one moment of those starving little ones out in the street, gaunt with hunger, eating orange-peel; and if you do these things, let us hope that the day will come when— Well, when they shall be comforted!

There is another point to be remembered in looking round, and that is—what odds and ends in the way of meat are there, left from the day before, that will do for the stock-pot—bones, bits of flap, &c.—so that these can be "put on" at once? This is a very important principle of economy. The point for consideration is, How are we to get *all* the nourishment out of the meat? Take, for instance, the bones of a chicken. With patience and continual boiling, the bones of one small fowl will make a quart of stock, which, when cold, will be a jelly. But suppose the cook puts the bones on in the morning to make some soup for the early dinner: it can't be done. If, however, she puts these bones in an enamelled saucepan, lets them boil *all day*, adding water from time to time, and, when she goes to bed at night, leaves the saucepan still on the fire, with a saucer for a lid, she will find a quart of jelly ready for the early dinner for the *next* day. This is the way to true economy.

In making beef-tea, again, it is very important to get all the nourishment out of the gravy beef. How often is this done? Some persons may say, "Ah! but if you want real nourishment for invalids, you want the juice of the meat, and it does not do to stew it too long." Very often, in the cases of pampered old ladies, the attendant sycophants vie

with each other in the quantity of meat they will provide to make beef-tea sufficiently "strong"; or it may be that the doctor orders the beef-tea to be made "from the juice of the meat only." Don't throw away what is left, but use it. If the quantity is large, and you do not care to use it yourself, find some poor family who will use it up, and let the family be chosen who want it *most*. Let the reason be that they are *starring*, and not that "they go to church." But you may use this meat from the beef-tea at home, remembering that it makes excellent potted meat; and with the aid of nutmeg, pepper, and butter, as described in previous pages of this work, it will keep good for weeks, and even months.

Forethought.—We have in an earlier number referred to the importance of looking ahead, and perhaps nothing is so important if we want to have an economical course of eating. The more you know about cooking, the easier does this become. Suppose, for instance, we have to provide for a late dinner every day, where there are two kinds of meat. This embraces an enormous class of what may be called fairly-well-to-do housekeepers—the backbone of society. The daily dinner consists of either soup or fish; a small joint, and something at the other end; afterwards one sweet. Say the family consists of six persons. As a specimen of the dinner, we will say either pea-soup, or some nondescript soup made from bones and vegetables (gravy beef or even knuckle of veal is never bought); the fish is generally a cheap fish, such as fried plaice, or hake, or boiled plaice; the joint, probably a shoulder of mutton or boiled neck of mutton. The opposite dish is the one to which we will now specially refer. Sometimes it is cutlets—frequently veal cutlets; very often it is *rissoles*. In the preparation of this dish the housekeeper who understands cooking will show his or her knowledge of economy. It is always best to avoid such dishes as mince or hashed mutton for such an occasion; because to roast a shoulder of mutton, and look at it while it is hot, while we *eat* hashed mutton, is not economy. Children old enough to sit down to a late dinner are too old to be told that they must finish the hash first before they have any other joint. On the other hand, a little savoury something, like a well-made *rissole*, that will be taken as an *entrée*, and from choice, will often act as a damper, and prevent persons at the healthy age of sixteen eating too much of the joint, which is really the most expensive part of the dinner.

Meat.—Here we come to one of the burning questions of the day—namely, Vegetarian Diet. There is no doubt that the majority of persons who work with their brains eat far too much meat.

What methods ought we to pursue to decrease this consumption? There is no dispute that we eat a great deal more meat than the French and Italians, and no doubt their method of cooking has a great deal to do with it, as well as climate. We will illustrate this by supposing that, for our specimen family dinner of six persons, the housekeeper has in the larder, in addition to a small piece of neck of mutton "suitable for boiling," a piece of raw beef-steak, weighing one pound, left over from the day before. How can you make one pound of steak into a dish for six persons, so that all can have what restaurant-keepers call a portion? An Italian cook would have no difficulty whatever about this. Cut the piece of steak as it is—raw—into strips, say twelve strips, and as nearly as possible equal in length and thickness. Make some bread-crumbs, and beat up an egg, and we will suppose you have in the house a bottle of powdered Parmesan cheese. Take a little of the Parmesan cheese, and dip all the pieces of meat in it, using it to dry the meat instead of flour. A tablespoonful of Parmesan will be about sufficient; add also a little pepper. Next dip each piece in the beaten-up egg, then in the bread-crumbs, and put them by, ready to be fried later on. In the meantime boil a pound of macaroni in plain water; when it is tender, drain it off, having just previously fried these little pieces of steak in some fat. So treated, each piece of meat looks double the size, and the pound of steak looks more like three pounds. The macaroni makes a border, and is eaten with the steak. A little coarsely-chopped parsley can be sprinkled round the macaroni, and of course in Italy the dish would be ornamented with half a dozen baked tomatoes. At any rate, there is a nice help for all. Now let us calculate the cost. The steak, say 10d.; the egg, 1d.; Parmesan cheese, 1d. (these bottles cost 8d., and would make more than eight dishes like we have described); good macaroni, retail, 4d. a pound. Consequently our dish costs 1s. 3d., and there is enough for six people, besides a very pretty dish into the bargain.

But in most London households the steak would have been grilled plain, a great deal of the nourishment would have dropped into the fire, and the dish would have caused a certain amount of awkwardness by the fact that one pound cannot be divided between six people. This illustrates what we mean by economy; and yet there are many who know so little of things that on *seeing* our dish they would give an indignant look, and say, "Ah! it's all very well for you, but we can't afford that sort of thing." They in their superior wisdom would probably have sent out for another piece of steak to make it look enough, and sent it to table *à la* frying-pan;

their only idea of ornament being horse-radish on the top, at twopence per root!

But to return to the subject of less meat and more vegetables, or rather let us say less meat, as vegetables are by no means the only alternative. First let us consider how best to lessen the quantity of meat. English housekeepers seem to have no idea of delicate morsels of meat. Take, for instance, the ordinary English cutlet and a French cutlet; the one is a mutton chop in egg and bread-crumbs, the other a little *bonne bouche*, the size of a penny-piece. We may be slightly exaggerating in order to illustrate the point, but really, speaking with mathematical accuracy, the one is a small chop, the other a large penny. What we want is to reduce the meat and increase the surroundings. For instance, suppose we have a loin of mutton not jointed, and we cut out that tender part, the undercut. Now suppose we cut this long piece of meat into slices, say, three-eighths of an inch in thickness. We now have a lot of little pieces of meat about the size of a penny, three-eighths of an inch thick. We can flavour these little pieces of raw meat with the siftings of a bottle of savoury herbs, using the siftings to dry the meat, with the addition of a little pepper and a very little salt. We can now take one egg and plenty of bread-crumbs, and in beating up the egg we can add almost a dessert-spoonful of hot water, which increases the bulk of the egg, and enables us to beat it more readily. Remember, have *plenty* of dry bread-crumbs; and now dip these pieces of meat, when dried with the herb-dust, pepper and salt, &c., in the egg, and smother them in the bread-crumbs, and put them by to be fried. The result is that a very small quantity of meat—perhaps not more than half a pound—makes a dish enough for six people, and, what is more, a very delicious dish. It requires a large border of fried potatoes.

This is the system on which our Continental neighbours save money, the cost in other ways being time, knowledge, a sense of refinement, &c. But then in the present day these things are at a discount, while there are hundreds of thousands of families where girls, ay, and boys too, with plenty of brains, education, manners, &c., are at their wits' end to earn a living at anything "respectable."

Perhaps we magnify our own profession, but we think that girls who spend more time in the kitchen than at the piano, and who learn to comfort the inner man rather than decorate the outer girl, need not fear eventually getting good husbands. There is a good old saying that "the nearest way to a man's heart is through his stomach." Girls who want husbands might possibly catch one with a dish of cutlets quite as easily as with a new bonnet; for this style of cookery requires a certain amount

of time, thought, and refinement of taste, as well as of eye. In many households there are those who have ample leisure, too often spent in reading novels. Why not go in for "high-class French cookery," which *costs about one quarter* of good plain English cookery? Parsley is very cheap where there is a garden, and a little dish of cutlets fried a bright golden-brown, surrounded by a border of dark green, crisp, fried parsley, as well as fried potatoes, will not cost more than one mutton chop; but what a difference! Of course, this style of cooking is not exactly adapted to navvies; but how many navvies or Mrs. Navvies will ever read these pages?

Vegetables.—A dish of this description can, of course, be served with a vegetable. Potatoes come first in this country, but vegetables vary with the part of England in which we live. Economy in vegetables consists in selecting only those that are *in season*. One too much neglected vegetable, to which we have already alluded, is dried haricot beans. Rice, too, is a great deal too much neglected in this country by those who really study economy. English housekeepers cannot get beyond the rice pudding and the rice border to a curry. What a cheap dish can be made out of a pound of rice, a pound of onions, and a piece of dripping, or any fat left from meat fried! Of course, the onion has to be fried, and the rice boiled, but not over-boiled, and the whole mixed together in a frying-pan, with a little pepper and salt.

Rice can also be boiled in greasy stock. Suppose we have had a joint of beef, and when the beef comes downstairs we scrape the dish on which it stood from gravy-fat—generally in the shape of wafers—and add this to the water in which we boil the rice; fry the onions in any fat we may have by us—butter is not necessary—and then add this chopped fine onion to the boiled rice. What a nourishing dish! and try to calculate the cost.

We will mention one or two more cheap dishes suitable for the second dish or *entrée* at the table of people who may be described as "well-to-do," before we proceed to the far more important subject of giving advice to those equally respectable (and perhaps better educated) persons to whom every halfpenny they spend is an object.

In making up these nice little dishes, a great deal, of course, depends upon whether we live in London or the country. For instance, what a delicious dish is pig's brains and black butter! In a somewhat remote part of England we have lately indulged in this dish at odd times, the cost of the pig's brains being nothing! The butcher had always been accustomed to throw them away, and informed us that he had never been asked for them before. This

illustrates our subject admirably. We should always try and make a nice little dish out of cheap materials; and, of course, the outside limit of cheapness is nothing. Another very nice little *entrée* can be made from liver—not only of calf's liver, but sheep's liver and pig's liver. In the words of the immortal pisan, "It is the seasoning as does it." The dish we refer to is one that has been already described—Italian fritters. The liver is fried with an equal quantity of fat ham or bacon, very highly seasoned indeed with fried onion or garlic, and herbs known as "Herbaceous Mixture," the whole rubbed through a wire sieve, and the mixture when cold shaped into little pieces about the size of a small picnic biscuit. This is dipped into a stiff ordinary batter, fried as a fritter, and sent to table. A dish for six people would not cost sixpence. The only real cost is—trouble.

In Italy these fritters are called "*Fritto Misto*." In cheap restaurants they are composed of *everything* mixed together. The scrapings of the plates and dishes—fish, flesh, or fowl, it is all the same—are all mixed together, and the fact of some of the fish being "high" seems to make but very little difference. This is economy of a very dirty kind; but we only refer to the lower restaurants, rarely frequented by English visitors beyond common sailors. And we may follow the example without any of the unpleasant details, as is done in the other restaurants and private houses.

A cheap dish of nice little fritters can be made from half a pound of sausage-meat. Half a pound of sausages will do, of course, by pulling off the skins. Take the half-pound of meat, roll it into twelve balls of equal size, then flatten them, flour them, and dip them into stiff batter, and fry them as fritters. The chief thing about this dish is its appearance. Suppose you fold a snow-white napkin and lay it at the bottom of a silver dish, the edges of which shine as if fresh from a jeweller's shop. The dish is surrounded by a border of crisp fried parsley. The fritters themselves are of a bright golden-brown. The batter cost 1d., and the inside 5d., supposing the sausages are 10d. a pound. Contrast this dish with what we met with recently. The two dishes top and bottom were boiled leg of mutton and a nice dish of mutton-chops. There was one chop each (six). From the swollen appearance of the fat, and the fact of the dish swimming in some thin gravy, we had every reason for thinking that they were cooked in a frying-pan. How they tasted hot no one can say, as everybody came to the boiled leg of mutton and turnips. This makes an excellent illustration of what we mean by economy. For that dinner the dish of chops was thrown away. If we had had a dish of fritters made from half a pound of

sausage-meat (the cost of one chop), probably everybody at table would have had one or two fritters first, and then finished their dinner off the boiled mutton. Of course it was rather an extreme case of folly: the result of two persons arriving unexpectedly. The mistress, therefore, thought it necessary to have a second dish on the table, and was unable to rise to the occasion beyond "Oh! send out for some chops." How many thousand times has the same been said and done in England for the same reason!

We have seen a dinner where two roast pheasants followed two roast fowls. We have *often* seen in years back, when oysters were cheap, cod-fish and oyster sauce followed by oyster patties. But we must return to our immediate subject of economy, especially in connection with eating less meat and more vegetable, or some other kind of substitute. We have in previous chapters referred to borders made of rice and potatoes, and would refer you back to them. This is an admirable method of serving a very small quantity of meat, as these so-called borders can be made nearly solid. A very shallow rim can be made round the top, and a little rich mince or something similar put on the top. The border looks quite full; it corresponds to a grocer's window full of currants, in which two or three pounds appear as so many hundredweight, owing to their being sprinkled on a board. When a very small quantity of meat is served in this way, it should properly be rather rich, and very highly seasoned. For this purpose there is nothing like garlic. In Lisbon you will see a Portuguese labourer eating his dinner as follows:—He has a lump of coarse stale bread in his left hand, and a piece of garlic in his right. He rubs the bread with the garlic, and then takes a bite. He generally finishes up with a bunch of grapes or an orange in summer, and in winter with a bunch of raisins. It is certainly best, in talking to our friendly Portuguese, not to get too close; still, this is an instance of an economical dinner.

When tomatoes are in season and cheap, a very nice dish can be made from a pound of tomatoes baked in the oven in a tin, with just sufficient butter to prevent them sticking, served with a pound of macaroni boiled till tender. Serve the dish as follows:—Drain off the macaroni quite dry; put it on a dish. Then take a brimming teaspoonful of chopped parsley, and sprinkle it over the top. The best way to do this neatly is to take the parsley a little at a time on the top of a knife, and then flip the knife. It does not do to have a lot of green in one place and none in another: that is what may be called clumsy cooking. Then arrange the red tomatoes on the macaroni, leaving a space between each. Then take the tin in which the tomatoes have been

baked, and pour the juice and butter into the middle of the dish, so that it runs down, as this helps to flavour it when it is all mixed together. This is a very pretty dish, very cheap, and is far better opposite a small joint than another dish of meat.

As we have mentioned before, the second dish facing the joint ought not to be either hash or mince, for the simple reason that the large majority of persons prefer the joint, though they would perhaps take the other dish from motives of politeness or economy. But, as we have remarked, it is not *true* "economy" to have a hot joint to look at while it is hot, and eat it when it is cold. That is not so much economy as essentially meanness.

Severe Economy.—But let us turn from the well-to-do classes to another class, perhaps of as good birth, as good station, and of as good manners, and often of better education, who cannot afford to have two meat dishes on the table—ay, who can hardly afford to have *one*. With such the question constantly arises, What is the best method of cutting down our kitchen expenses, so that we may get the greatest amount of nourishment out of every penny we spend? There is no doubt that we must cut down our expenditure in meat to the lowest fraction possible, and expend money chiefly on cheaper forms of food. A very cheap and neglected article of food is lentils; and as we wish to be practical, we will give a receipt for making lentil-soup, which is one of the most economical dishes that we know of. Lentils cost from 2d. to 2½d. per pound. The Egyptian lentils are the best. If possible, make some stock by chopping up as small as possible 2d.- or 3d.-worth of bones. In some country places a considerable quantity of bones can be obtained for this sum, as, unfortunately, the country poor, and, we fear, even the London poor, have not yet grasped the importance of utilising this neglected article of food. The longer these bones stew, the better; and where there is a fire kept in all day, this is an important point to be borne in mind. Next take three or four onions and a couple of carrots, cut them up small, and fry them in a little fat or dripping, or even the skimmings of the stock-pot or saucepan in which the bones have stewed; for in cases of this kind we must take forethought for granted, and we presume the bones will have been stewed the day before the soup is made. This frying of the vegetables makes an enormous difference in the flavour of the soup. Then put the pound of lentils into cold water or bone-stock, say a gallon, and let them boil, adding the fried onion and carrot, as well as the remains of any cold potatoes that may have been left; or five or six fresh potatoes can be added and boiled with them. The soup can be thickened with a little

oatmeal. It is also an improvement to add a handful of rice. Of course the soup must be flavoured with pepper and salt; and a pinch of thyme, say a salt-spoonful, will also be found an improvement. The whole should be well mixed together, and probably during boiling the gallon of soup will be reduced in quantity by about a pint. You have here an enormous amount of nourishment at a very small cost. It is an ample meal for a husband and wife and, say, eight children, the quantity of soup being nearly four quarts.

Next, we know that these sorts of soups in good society require fried bread. In the present case this is out of the question; but let us try and find some cheap substitute. We all know, where there is a large family of children, the tendency there is to leave pieces of crust. Little ones, when properly taught, are generally told not to leave anything; but who has not observed how they will at times get rid of their crust by surreptitious means? Very young ones will hide their crust under the edge of the plate till they arrive at the trousers age, when they will pocket them, and throw them away when there is no one looking. It is far better to have pity on their tender gums, to let them leave them openly instead of secretly, and utilise these fragments that remain, that nothing may be lost. Take all the stale crusts and pieces of broken bread in the house, put them in a dish, and place them in the oven till they all become as crisp as rusks. When this is done, take them out, and with the rolling-pin crumble them into a sort of powder. This powder can be served with the soup, and is a great improvement to it: indeed, as great an improvement as fried *croûtons* are to oyster-soup made with four dozen natives at 3s. 6d. per dozen, to which, in accordance with Francatelli's admirable directions, we have added a quart of boiling cream. Pause for one moment, and contrast the cost of these two soups. Yet the soup we have here described is by no means a coarse compound, from which a refined taste will turn away in disgust, but really palatable; and there are many epicures in Pall Mall clubs who, *if they thought it cost money*, would eat it with relish. For the cost of a thing does affect our notions. If fresh herrings cost half-a-crown each, what a demand there would be for them in these establishments, on account of their exquisite aroma!

Where economy is an absolute necessity in order that body and soul may be kept together, we should do well to learn from the humblest. In some parts of the agricultural districts of England it is a common thing to see villages or scattered groups of cottages tenanted solely by labourers. These cottages possess a small garden back and front. The rent varies from 1s. to 2s. a week; the man's

wages from 10s. to 15s. a week. He has a wife and, generally, about eight or ten small children—fat, rosy, happy, and decently dressed. How do this man and his wife and all these children manage to get along as well as they do? Of course we are supposing that the wife earns nothing, except perhaps during the haymaking and harvesting seasons. The great help is the garden; and those who have no garden must make the greengrocer take its place. Probably vegetables are a cheaper form of nourishment than bread. Another help is skimmed milk, which in many parts of the country can be obtained at the rate of three or even four pints a penny. In London the price is about 2d. a quart. This skimmed milk has various names. London milkmen call it “separated milk,” from the name of the machine, “The Separator,” used in butter-making. In the West of England it is called “scalded milk.” When this can be obtained, it will be found a great saving, especially in cases where there are young children; and in most instances where very strict economy indeed is requisite, one of the most frequent causes is that children increase rapidly while the income remains stationary. The cheapest and best form of serving milk and vegetables is vegetable soup; and English people would be astonished in travelling through the agricultural districts of France, quite away from the beaten track of tourists, to see how very cheaply these men and families live, owing to the garden being more prolific than it is in this country, while the climate can be depended upon.

For practical purpose, however, we will take our home farm labourer, his wife, and ten children, on a wage of twelve shillings a week, and even he may inspire hope and confidence in the heart of the poor gentleman with similar family who has an income of £100 a year.

Vegetable soup is made very simply. It is made from almost every kind of vegetable you can think of, and in France they always finish with a vegetable that you would *not* think of—viz., a handful of sorrel. Where persons make a mistake in making vegetable soup in this country is, that they neglect to *fry* the vegetables. We do not mean that all the vegetables should be fried, but some: certainly, the onion and carrot. The difference in the flavour and richness of the soup is enormous when this is done, compared to what it would be were it neglected. Let us run through the details of this perhaps cheapest form of nourishment. We will suppose that we have two quarts of “separated” milk, which would cost in London fourpence, but in the country a penny. Next, what vegetables are essential? Onions come first. Suppose we have half a pound of onions, some carrots, turnips, cabbage, parsnips, potatoes, vegetable marrow, &c. Celery is a great improvement,

but we leave it out on the ground of “economy.” It would not be necessary to put all these vegetables in; but were all these at our disposal, we should pick, in addition to the half a pound of onions, two good-sized carrots, one small turnip, and we can always fall back upon potatoes to get consistency. Fry the onion, carrot, and turnip in a little grease, or fat, or dripping; of course, butter would be best, and where butter is eightpence a pound, it is worth while using some. Cut the vegetable up small, and avoid too much turnip, as it is apt to overpower the flavour of all the other vegetables put together. After the vegetables have been fried till they are tender, without being browned, add them to the milk, and let them boil. A few parsnips might be added, and enough cold potatoes mashed up to make the soup thick. The soup will require flavour, and for this purpose there is nothing like either thyme or marjoram. In the country these can be grown, and in London a sixpenny bottle of thyme will last for months. A good salt-spoonful of thyme will be ample. Of course, you must remember that thyme varies in strength with age, also with the fact whether the bottle has been well corked down or not. If you have an empty glass-stoppered bottle in the house big enough, it will be a good plan to keep the thyme in this. Of course, the pepper and salt always form an additional seasoning.

This soup can be varied in an infinite number of ways. We cannot go through all, for as many changes could be made as there are tunes to be got out of a piano; but we may give a few general suggestions. Vegetable marrows are often very cheap, especially when large, and make a very delicious soup. But they must be treated differently to other vegetables, on account of the quantity of water they contain. Persons with little gardens often have huge vegetable marrows, what they call run to seed. Cut the vegetable marrow open, and take out the seeds. Peel the marrow, cut it up into small pieces, put a little drop of *water* at the bottom of the saucepan to prevent it burning, and put it on to boil. You will soon find the saucepan more than half full of water, when perhaps you will be able to put in some more pieces of marrow. When all the marrow has been used up, you must let the whole boil and boil away till it becomes a pulp. This is a work of time, and, therefore, you must start early; remember also not to add any salt till near the finish. You can now add the fried onion and the milk, which should be boiled separately, and the soup should be thick enough from the vegetable-marrow pulp. Of course, pepper and salt must be added.

Both these soups require “fried *croûtons*,” and we have described the poor man’s fried *croûton*, viz., every scrap of stale bread and crust in the house,

baked in the oven until quite crisp, and then crushed with a rolling-pin.

Another very cheap way of serving vegetable marrows, especially when they are young, is to cut open, scoop out, and fill with sage-and-onion stuffing, treated otherwise like the stuffed marrow described in Vol. II., p. 78. This is a very nice dainty dish, very appetising, and very cheap. If the interior were composed of truffled chicken forcemeat, it would be a dish fit to be served at a dinner where they charge a guinea a-head. But with a good appetite and plenty of bread, we shall probably enjoy our meal more of the two.

If we wish to decrease our quantity of meat, and bring it down to its lowest ebb, another very good plan is to make little meat patties. Here we can absolutely learn from the railway refreshment stall, incredible as the statement may appear. Have you ever observed those handsome patties which, in one respect, resemble the noble-looking forehead of an Italian refugee? They promise so much, and perform so little! If you take one of these pies and boldly pull it in half, we may well exclaim with the ghost, "Oh, Hamlet, what a falling-off is there!" The meat is not much bigger than a penny-piece, yet if we have one of them for our dinner, and we "make believe" very much, we may imagine we have had a meat meal. Where there are a lot of children, we can take a very little meat, say half a pound—the remains of cold meat will do—and make it very rich with onion and thyme, not omitting the pepper, and then make a cheap dripping crust, and make a few little patties, one each, like mince pies. These can be eaten either hot or cold. They are very cheap, and if we want a grand name, they may be called "*Pâté à la Buffet de Chemin de Fer.*"

Another very good form of making a very little piece of meat go a great way is a meat pudding, mixed with vegetables. If we cannot afford to have a joint, we can perhaps afford to buy one pound of scrag end of mutton; and we must try and make it do for ten persons. First cut up the meat and boil it in a very little water, so that we can pull the bones out dry. Then make a large suet-crust, and, having cut up the meat, mix with it enough onion, potato, and carrot to fill a large pudding. You should put a cloth well floured in a basin, make the crust very thick, and put the crust in the basin in the cloth. Then fill the interior, pour in the little drop of water that we boiled the mutton in, adding pepper and salt and a pinch of thyme. Now put the top on, tie the cloth securely, and plunge the pudding into a saucepan of boiling water. What we mean is, don't boil the pudding in the basin, but in the cloth, like a Christmas plum-pudding. It is nicer this way, and has more room to swell; and as

the crust is very thick, there is no fear of the pudding breaking and the gravy escaping. Beef-suet is best, and a quarter of a pound is enough for a pound of flour. Let this pudding boil for three or four hours, and it will be found a very economical dish, as it gives a good dinner at a cost of about 1d. a-head.

A similar pudding can be made from the remains of a joint. Scrape all the meat off the bone, and chop the bone up as small as possible. Put these pieces of bone on to stew the day before, with an onion, the whole day long, as long as there is a fire, and boil it away until there is only quantity enough left for the gravy. Then add the meat that has been scraped off, and the vegetables, and the pepper and a pinch of thyme as before.

A very cheap dish, inasmuch as it goes a long way, can be made with the assistance of a piece of liver, especially if you have got the remains of a little piece of roast pork. Take the liver, and scrape it raw; you will scrape it into a sort of pulp, leaving all the sinews and strings behind. Now parboil two or three onions, and chop them up with some sage-leaves, using the usual proportion for making sage-and-onion stuffing. If you have any cold pork, chop this finely and add it—some finely-chopped beef-suet will do; but you can make the dish from liver alone, if you add some kind of fat. Make a lot of fine bread-crumbs, and add this to the raw liver-pulp, with the chopped sage and onion and pepper and salt, till it becomes sufficiently thick to enable you to roll it into balls. You will find that the liver-pulp is sufficient moisture for the purpose after a great deal of mixing. A little grated nutmeg may be added with advantage, but is not essential. Dip these balls in flour, and bake them in the oven for about an hour, more or less, according to size. The balls should not be larger in diameter than a penny is. Serve these in a large dish of mashed potatoes, and you have another nice cheap dinner, at a cost of about a penny per head, which looks nice and tastes nice. There are many such methods of cutting down our supply of meat to a very small amount. A dish of this description, preceded by some lentil soup or some vegetable soup, really makes a good dinner.

There are many other kinds of soup which we may call attention to, without entering too deeply into the method of preparing them. For instance, we can have ox-cheek soup, sheep's-head soup, ox-foot soup—or, as it is sometimes called, cow-heel; only remember that, for economy's sake, these should be bought scalded, but not boiled. It is almost incredible what a quantity of steak can be made from one ox-foot, which, when cold, will be a hard jelly; only it requires a couple of days to boil, and is therefore more suitable in winter than in summer.

In all these soups, where they form the meal in conjunction with bread, you should bear in mind the importance of thickening. For this purpose you can use pearl-barley, and the longer you boil this the better; or you could use Scotch oatmeal, or rice; and do not undervalue the flavouring. Very often the little pinch of thyme or marjoram makes all the difference.

Another very economical dish is cottage-pie, which is an admirable means of using up any odds and ends or scraps that may have been left in the way of meat. You make a sort of rich mince, and moisten it with a little stock made from bones and gristle. Never mind the mince being greasy; it is *better* greasy. You flavour this mince, as before, with onion and thyme and pepper, and put it at the bottom of a pie-dish. Then you cover it with a thick layer of mashed potatoes, and fill the pie-dish up to the top. Perhaps the mince at the bottom of the pie-dish would not be more than an inch deep, while the upper part of the dish would be four inches deep of mashed potatoes. You then bake this in the oven for two or even three hours, till the potatoes get dry and brown on the top; but you must not let it get too dry. In the meantime the steam from the savoury mince impregnates the potatoes. The potatoes also absorb the grease and fat. This is a very economical dish, and very good for children. You can score the top of the potatoes with a fork, and, rolling a ball of potatoes, place it on the centre at the top. This dish retains its heat a long time, and little ones should be warned against burning their mouths.

If your pie-dish is a common yellow one, you can fold a dinner-napkin neatly about an eighth of an inch higher than the dish, and pin this round. A few pieces of parsley can also ornament the top of the dish, although it is hot. It is quite possible to be strictly economical, and to bring the cost of our dinner down to a penny per head, and yet keep up a sense of taste and refinement: so important where there are children. It is these home lessons that are requisite to counteract the evil effects of the School Board, which is filling the country with educated boors, far more objectionable and far more dangerous than the old-fashioned ignorant rough, whose instincts were, as a rule, by no means bad.

Where there are children, it is necessary from time to time to give them sweets. The best and cheapest, and, at the same time, most wholesome form of sweets, is stewed fruit with custard. Custard can be made very economically by thickening skimmed or "separated" milk with corn-flour, adding sugar, and flavouring it with bay-leaves. There are many ways of colouring it, perfectly harmless, which perhaps you had better find out for yourselves

from preceding articles. Of course the colour must be a pale yellow. However, be sure that the colour you use is harmless. A very small quantity of corn-flour will make milk as thick as custard. This can be poured over or round stewed rhubarb, stewed apples, or stewed plums, when these fruits are in season.

We need not mention rice-pudding, both boiled and baked; but for grown-up people who require something savoury and nourishing, we would strongly recommend a trial of cheese and rice. It is not necessary to have Parmesan cheese, although this is the best; but you can grate up stale pieces of cheese, rind and all, by merely scraping the rind first.

Fish.—We have not as yet mentioned fish as an article of food. This is entirely a question of price. Fish is not so nourishing as bread and vegetables, but, when fish is cheap, makes an excellent additional article of diet. We have seen fish carried away by cartloads for manure. At other times the same fish will be dearer than steak. The amount of waste that takes place in the United Kingdom in the course of a year is appalling. Some fish is much more nourishing than others; and, as a rule, that fish is most nourishing which is most glutinous or most oily. For instance, turbot and eels are far more nourishing than plaice; but then these two forms of fish are, as a rule, expensive in most places, although on the west coast of Ireland you can buy a turbot fit for an alderman's table, and big enough to dine twenty people, for a shilling. When fresh herrings are in season, nothing can be nicer or cheaper. It is impossible to mention the price. In London you can sometimes buy them for two a penny. We have seen them sold in Cornwall at six a penny; and we remember at Loch Long, in Scotland, where they were salting them, the fishermen informed us that we were welcome to help ourselves to as many as we liked without any charge. Pilchards are even more plentiful at times. Plaice is the most common fish, to be obtained nearly all the year round. We may also mention hake, and ling, and conger-eel. This last naturally suggests soup, and we would recommend people desirous of exercising strict economy to try a few experiments with fish soups. For this purpose there is nothing like conger-eel; but, undoubtedly, there is a rankness about fish soups which many persons of delicate taste cannot overcome.

In making fish soup, you should make some stock with the fish bones, and it is quite possible to have a small dish of fish one day and some fish soup the next. The stock has to be thickened with butter and flour, but water should be used in making it, and we consider it a mistake to use milk, except with

oysters and mussels. Chopped parsley should be added to the stock, as well as boiled rice. The one essential flavour for all fish soups is anchovy sauce.

One of the nicest and cheapest fish soups can be made from mussels. The difficulty is to get rid of the sand. They should be well cleaned with a brush before they are cooked. One very nice way of serving mussels is, after cleaning them, to put them in a saucepan, shell and all, with an onion sliced and a spoonful of savoury herbs or a pinch of thyme. Make them hot, and as soon as they open of their own accord, serve them up in a soup tureen, and eat them like oysters, with bread-and-butter. To make mussel soup, you can place the mussels in the saucepan, with an onion sliced up and a small pinch of thyme. As soon as the mussels open of their own accord, take out the mussels and put them in a dish. Put back the shells in the saucepan, and bring the whole to a boil. Suppose you had two quarts of mussels, you can make three pints of soup. After having boiled, strain off all the liquor through a very fine hair-sieve into a basin with a spout, and let it settle. Now boil separately sufficient milk to make up the quantity required, viz., three pints. When the milk has been boiled, pour the mussel liquor, flavoured with the onion and thyme, on to the milk; only do not pour out the dregs, which will be gritty. Now thicken this with a little butter and flour; add a brimming teaspoonful of anchovy sauce. Make the whole hot, and make a soup-tureen hot by pouring boiling water in it. Empty this, and put the cold mussels in the hot empty soup-tureen, and pour the boiling soup on to it. The reason of this is that we wish to avoid making the mussels hard, and were *they* boiled they would become like leather. Toasted bread in considerable quantity should be

served with this soup, which is quite equal to, if not superior to, oyster soup. We can, of course, have our substitute for fried *croûtons* again, by putting the crusts in the oven.

This is a long way the best fish soup we know of, and, when mussels can be bought at a penny a quart, very cheap and good. Mussels are in season when oysters are, and are said to be dangerous, and even poisonous, when out of season.

Perhaps a better method of using up fish bones is to make a fish sauce instead of soup. In reality it is the same thing, only we make a smaller quantity and use it as a sauce. Suppose we have got a lot of fish bones, and stew them down till we make half a pint of fish stock, which when cold will form a jelly. We can now add some chopped parsley, make it thick with butter and flour, flavour it with just one slice of onion, and last, but not least, add a teaspoonful of anchovy sauce. If by any means you can get some lobster coral and make some lobster butter, and add a brimming teaspoonful of this, you will have a grand dish. This fish sauce can now be used as an accompaniment to plain boiled potatoes or to plain boiled rice. This is a very cheap substitute for fish at the commencement of dinner; and, of course, with plenty of bread and potatoes, or rice, it can be made to do duty as a dinner in itself. But we must close, though the subject of economy is perhaps one of the most important of the great social problems of the day. We have run briefly through a number of dishes, but space will not permit us to give more than the outlines of a subject so important that volumes would fail to exhaust it. We hope, however, that our instances will at least serve as specimens, and be of some service to those who have to study the subject only too seriously every day.

FRETWORK.

FRETWORK may be said to bear the same relation to wood-carving that stencilling does to oil painting; and both arts are capable of being raised by the exercise of taste and skill above the purely mechanical operations upon which they are based. Fret-sawing has many advantages to recommend it to the amateur, and the very simplicity of its execution has caused it of late years to be as popular with the feminine as with the masculine members of the household. In few arts can skill be so rapidly acquired; and when acquired, few can be made to produce so many excellent results. It can quite well be pursued in the room occupied by the other members of the family, for the slight untidiness

made by the saw-dust and chips is soon gathered up, leaving no trace behind. A dusting-sheet or old newspaper laid down where necessary will collect all the *débris*, and render it easy to remove. Again, there is no unpleasant smell connected with it, as the fret-cutter is not obliged to do the polishing and varnishing himself.

Materials.—Everyone is apt to consider that wood is the sole material to be worked with the fret-saw, quite forgetting that ivory and metal are often employed for this purpose. Wood is, of course, more easily obtainable than any other material, but the quality, kind, and thickness must depend upon

the purpose to which the completed work is to be applied. Naturally, the more elaborate the "figure" of the wood, the more handsome and valuable will be the work. The dealers in fretwork necessities generally supply samples of the different woods most used, which are very convenient for reference by the amateur who is unacquainted with the best material to use for any particular piece of work. From Messrs. Harger Bros., of Settle, can be obtained for a shilling a set of twenty-four neat little samples, and it is worth while for anyone proposing to do much of this work to send for such a set. A beginner cannot do better than use a white wood with a close, regular grain for first attempts; and either pear, lime, maple, or sycamore will be found comparatively easy to work. Pear-wood costs about sixpence per square foot, lime is somewhat cheaper. Sycamore is rather harder than the other two, but is still pleasant to cut. Maple costs from fourpence to sevenpence, bird's-eye maple from ninepence to a shilling, per foot. The ordinary maple should be used at first, for the very beauty of bird's-eye maple renders it difficult to cut, owing to the irregularities caused by the

spotted figure. The thickness varies from $\frac{1}{8}$ to $\frac{3}{8}$ of an inch, and the width of the boards from 12 to 15 inches. Pine is the cheapest of all woods, from twopence to fourpence being charged for a square foot; hence it answers extremely well for a beginner to practise upon, before so much skill has been obtained that no risk of spoiling the more expensive kinds will be incurred. Mahogany is always a favourite wood, as it possesses the two advantages of being easy to work, and handsome in appearance. It costs from fivepence to eight-

pence per foot, according to the thickness and the quality. An ambitious fret-worker always has an idea that oak is the most appropriate wood for many designs. Though this may be true enough, it requires some skill in cutting, owing to the twisted nature of the grain, which is apt to interfere with the clearness of the cut. It is also slightly

more expensive than the kinds previously mentioned. American walnut is an excellent wood for the fretsaw, one of its chief advantages being that it pays well for the trouble of polishing and finishing. Satinwood is rather expensive, but is of a pretty yellowish tint, and takes a beautiful polish. Tenpence and one-and-twopence per foot are the prices usually charged for this wood. Rosewood should only be attempted by a skilled worker, for it is extremely tough, and is intersected by gum or resin channels, which greatly interfere with the smooth working of the saw.

Many woods are known to dealers in fretwork materials by technical names, which convey to a novice no hint of their real meaning. Such are "American canary" and "Tesso" wood. The former is tulip wood of a yellowish colour; the

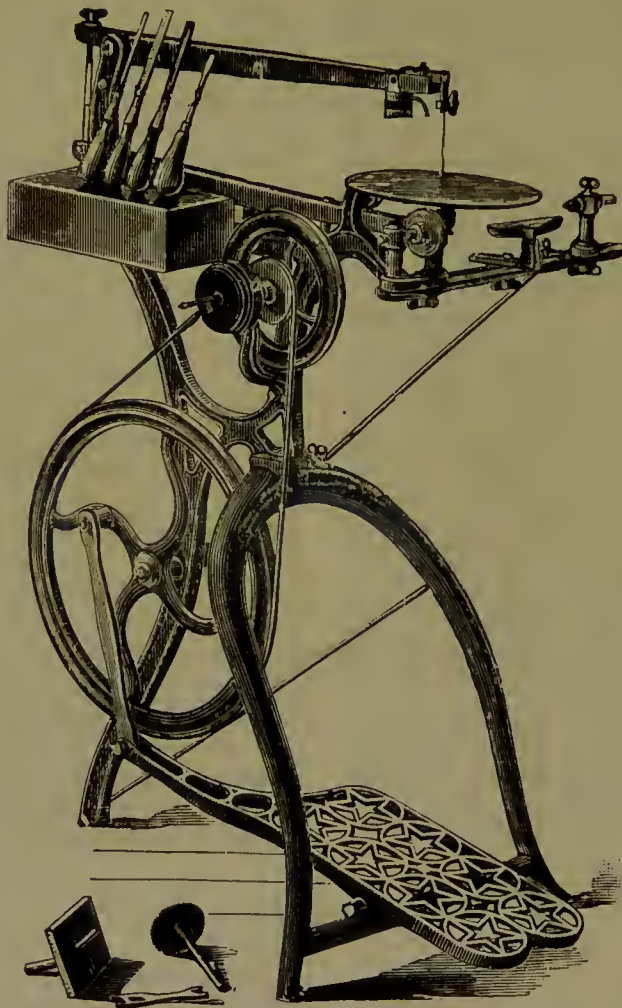


Fig. 1.—THE LESTER IMPROVED MACHINE.

latter is yew, and is hard and regular, and with a rich yellowish tone in it inclining to orange, which gives it a warmth that at once prevents it from being commonplace. Ebony sounds as though very effective work might be executed with it, the fact being that it is extremely difficult to cut, owing to its excessive hardness. It is also so brittle that there is great risk of spoiling a piece of work, perhaps just as it approaches completion. The sawdust also soils the hands and anything it may fall against. This wood has the disadvantage

of being very costly, as much as four-and-sixpence being occasionally charged for a panel a foot square. When it is essential that the work shall be black, it is better to use another wood, and to stain it after the cutting is finished. Holly-wood is of a delicate soft whitish colour, which, when appropriately worked, has a fair resemblance to ivory. It requires little finish, but the worker must be very particular to get it from a well-known firm, as should it be indifferently seasoned, it will be sure to warp. It should be cleaned, but will not require polishing. Cedar is pleasant to cut, but the kind used for cigar-boxes cannot be applied to very elaborate work, owing to the grain being insufficiently close, thereby causing very delicate portions of the design to fall out during the process of cutting.

Three-ply fretwood consists of three slices of wood glued together and submitted to enormous pressure. The centre board is arranged so that the grain runs in an opposite direction to that of the two outer layers, thereby quite preventing any risk of the wood splitting when worked. It is also impossible for it to warp. In any case, if a panel of wood is required free from irregularity of any kind, a specially-selected piece may usually be had from any firm supplying materials, in some cases a small extra charge being made for a thoroughly good panel being sent. At most places an allowance in measuring is made for any knots or imperfections there may be in the wood.

The fretwood must be carefully kept in a dry place, or it will warp. It is sometimes very difficult to prevent a thin panel from becoming bent, but when required for use, it may be straightened by placing it before the fire with the convex side towards the heat. It must be watched, and removed as soon as it is flat. Another plan is to damp the wood and to set it to dry beneath a weight.

The metal usually employed for fret-cutting is nickel-plated sheet zinc. It is about $\frac{3}{32}$ or $\frac{1}{16}$ of an inch thick, and costs about 1s. per square foot: brass may also be had, and once the worker has discovered that he possesses the power of thus cutting metal with so simple a tool as the fretsaw, he will see how many ornamental clasps, hinges, key-plates, finger-plates, book-corners, and even small articles of jewellery, can be made with little difficulty.

Ivory is a comparatively new material for the fretworker. It is as thin as metal, but rather more costly, and is to be had coloured to imitate tortoise-shell, ivory, and ebony, as well as red and white. The worker should be warned not to work with this, or the similar material known as "celluloid," before a fierce fire, as it is extremely combustible. The ornamental combs now worn by ladies in their hair are made of the same substance, and many serious accidents have occurred owing to their having been submitted to great heat while sitting near a brisk fire. Imitation mother-of-pearl, marble, and shell, can be also had prepared for inlaid work, in small sheets at about half-a-crown each. Real mother-of-pearl is sometimes used, but can be had only in little pieces about two and a quarter inches

long and half an inch wide. This will, however, be found so exceedingly hard to cut, that the worker will probably prefer a good imitation.

Tools.—If the work is to be taken up only for a short time, and the amateur is doubtful of success, by all means let him invest in a set of fretwork tools sold on a card at half-a-crown: but if a little experience has already been gained, he will find it far better economy of time, and material too, to have a well-made treadle machine. Small fretwork outfits may be had at as low a price as one-and-



Fig. 2.—THE ROGERS MACHINE.

threepence, but they are only fit for children to amuse themselves with, where it would be money wasted to allow them the command of an expensive set. For five or six shillings a fair hand outfit may be had, comprising an oval saw-frame, cramp, bradawl, two dozen saws, three files, fretwood drill, and two patterns and instructions. A good beginning can be made with these. Boxes can be had for eight-and-sixpence, which include all these tools, a selection of nails and screws, a cutting-board, and an iron plane.

Should a treadle machine be preferred—and of course the work can be far more quickly and accurately executed by its aid than by the ordinary hand-saw—the makes are legion, special advantages being claimed for each. All have this merit in common over the saw-frame, that the worker has both hands free to guide the wood while using the saw. Another advantage of the treadle machine is that by its use there is no difficulty in getting a perfectly clean perpendicular cut, and a piece of work cut with the hand-saw too often slopes on the under side in a way that does not add to its beauty. One of the best machines is the "Lester Improved" shown in Fig. 1, and which costs £2 5s. This is strong, and yet sufficiently light to be moved from place to place. It is partly of wood, partly of iron, and is furnished with a small lathe. The saws, when properly managed, should without difficulty cut through a two-inch thickness of wood. This machine is furnished with an automatic blower for removing the sawdust, which is apt to collect over the lines of the design. This provision, though not an absolute necessity to a good machine, saves a considerable amount of trouble to the worker. The "Lester" will do quite large-sized pieces of work, as there is a free swing of eighteen inches for the wood between the saw and the arms; thus, considering that the middle of the work is beneath the saw, there will be sufficient space for a piece of wood nearly three feet across.

Rogers' Improved Fret-saw (Fig. 2) is entirely made of iron, and only costs 16s. to 20s., while it will cut as large a surface of wood. It is fitted with the automatic blower, but has no lathe. It is better to refer workers to two of the best machines in the market than to create confusion by mentioning a dozen different makes, all of which are excellent in their several ways. These and other machines are supplied by Messrs. Harger Bros., of Settle, Yorks; and amateurs may learn much by studying their sixpenny catalogue before giving their orders. Most first-class tool-shops in the larger towns also keep either these or similar ones.

There is a machine to be had that works by hand instead of by treadle, but it is rarely used in this

country. It has, however, been much improved of late years, and has the advantage over the saw alone, that the worker is able to give full attention to the cutting pure and simple, without any thought or care as to the difficulty of keeping the frame properly balanced, and the saw in a strictly perpendicular position. One of the newest patterns, with all modern improvements, is shown in Fig. 3.

Now for the ordinary frames. These are usually made of steel with a wooden handle, as shown in Fig. 4. The blade, as shown in the illustration, is held between two screws or clamps. The size of wood that may be cut by the saw depends on the space between the saw and the back of the frame. They may

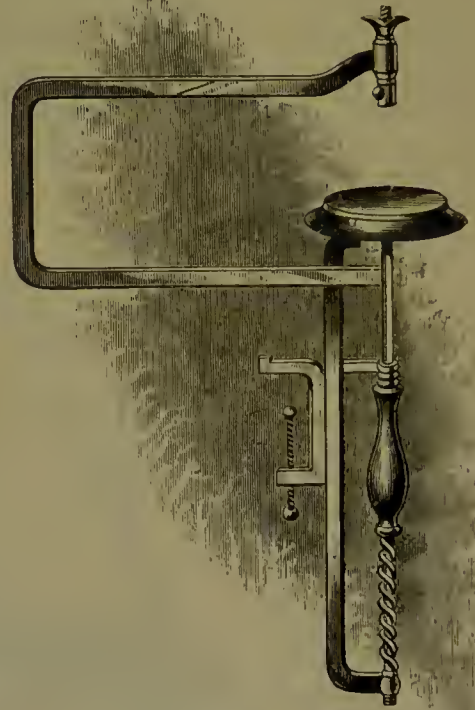


Fig. 3.—HAND-MACHINE FOR SAWING.

usually be had in sizes varying from twelve to twenty inches. A fourteen-inch frame will be found large enough for all ordinary work, as the larger the frame, the more difficulty will a woman, more especially, have in wielding it. When choosing a frame, it is very necessary to bear in mind the fact that it is the frame holding the saw, and not the wood, that has to be moved about to suit the exigencies of any particular pattern, hence the worker must select a frame that feels comfortable to the hand, and is capable of being easily moved in any direction. With the treadle machine, the reverse of course is the case, as the saw is fixed.

The saws themselves are of various kinds, according to the purpose for which they are

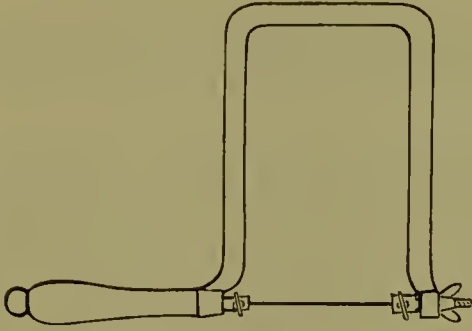


Fig. 4.—HAND FRETSAW.

required; but as a general rule it may be stated that the cheapest are the dearest in the end. Even the most expensive are cheap enough, so this should not influence the purchaser when making his choice. It is always advisable to purchase those made by a good dealer, and with a good name. The Star and Griffin fret-saws are about the best; taking them for all in all, the former are most suitable for machine work, the latter for the hand-frame. These blades vary from a penny to sixpence a dozen. Some workers like the double-toothed saws, but it stands to reason that from their very construction they are more apt to snap than the single blades; the double tooth makes the band of solid metal narrower between them, and hence it fails when put to any great test. For very hard wood, metal, or ivory, the Patent Champion fret-saws are recommended. They are extremely narrow, and broader at the edge than at the back, the teeth thus producing a wider cut, through which the back of the saw is brought without any difficulty. The sizes of the Star and Griffin saws vary from 000 to 8, the largest. Three of the principal sizes are given in Fig. 5. The worker must not be disappointed at the sudden snapping of a saw, even though of the best manufacture; for this cannot be avoided, and the more highly tempered the saw, the more likely is this to happen.

A cutting-board is the next requisite. This is a flat slab of wood, arranged with a cross-bar to take

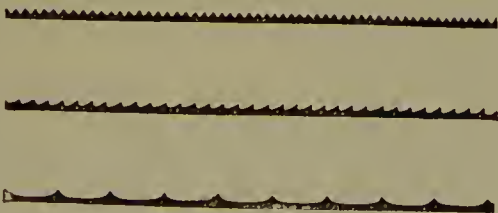


Fig. 5.—SOME SIZES OF SAWS.

the cramp, with which it is held to the table. A cutting-board fixed in position on the table is shown in Fig. 6. It requires screwing to the table—either with screw-clamps contrived for the purpose, or, if the table is an old firm one in which screws may be driven, it may be fastened right through to the wooden top. The open part of the board projects beyond the edge of the table so as to allow full play for the saw.

Another very important requisite is a tool with which holes can be bored in the wood ("saw-gates," as they are called) through which the saw can be passed. For this purpose either a bradawl or a drill may be used. Of these, there are several kinds, one of the most convenient being sold with twelve bits—six for wood, and six for metal. These cost about half-a-crown each.

Files, too, are a very important item of the fret-

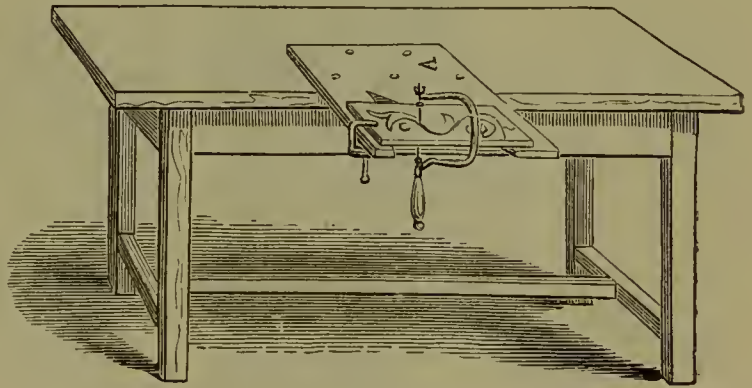


Fig. 6.—CUTTING-BOARD AND SAW IN PLACE.

cutter's outfit. They are quite inexpensive, the largest size of all costing only a shilling, the smaller and more useful sizes from three-halfpence to sixpence. The better the management of the saw, the less the amount of filing required; but till the worker is very expert, it will probably be necessary to overlook the design and rub down any raw edges or splinters that may be left on the under side of the wood. The worker should also lay in a supply of glass-paper, of different degrees of coarseness. More harm than good, however, will be done by this unless he knows how to use it. Half a dozen slips of wood should be cut of different sizes and shapes to fit well into corners and curves, and over them should be glued strips or square pieces of the paper. Cork pads can be had already made, if the worker is unable to contrive his own. In this way the rubbing may be so arranged as to be carried on only in those parts where it is most required. No other tools will be needed beyond such as are to be found in every properly-appointed tool-chest; and the polishing and staining will be spoken of later on.

Designs.—Nowadays there is no scarcity of good patterns for the fret-sawyer to avail himself of, and, indeed, so thoroughly reliable are these that there is little reason, unless he is an accomplished draughtsman, for expending the time and trouble necessary to design his own. There are several ways of transferring the pattern to the wood. The most common plan is to paste the paper to one side of the wood; but thrifty workers object to this on the score of the pattern being entirely useless for future cutting. This is avoided if transfer-paper be made use of; it is to be had in three colours, blue, red, and black. Lay it with the prepared side downwards on the wood, over it place the design, and follow all the lines of this with a hard and sharply-pointed implement, such as a bone knitting-needle. A good pointer may be improvised of a piece of wood about four inches long, through the centre of which is bored

a hole about an inch and a half deep. Into this handle may be fixed the half of a bone knitting-needle by the help of glue or melted resin. A small tracing-wheel answers well for straight lines, but is of little use for elaborate curves or angles. When all have been followed, the papers may be removed, and the design will be found clearly reproduced on the wood. Or by using several sheets of carbon paper, and several pieces of white paper, half a dozen copies may be taken for pasting, and these are probably as many as the worker will require of one pattern. When the paper is done with, it may be removed from the wood by simply moistening it with a damp, not a wet, sponge. In using a design pasted to the wood, care must be taken not to begin until it is perfectly dry, and to leave the wood under heavy and even pressure till it is ready to be worked

upon. The amateur will find it easier to cut if the greatest length of the design is laid with, not against, the grain of the wood, thus rendering it less likely to split.

The Method of Sawing.—The beginner must not expect to develop into an accomplished fret-sawyer by inspiration, easy though the art be to master. It is advisable to begin operations on some small pieces of cheap wood, using a coarse saw, till some dexterity has been gained in handling

the frame, and in adapting it to the requirements of the various angles and curves to be followed. Cigar-boxes afford excellent wood for this purpose, and there are many light wooden boxes that may be experimented upon. It is well, too, to begin with wood as thin as possible, gradually working on till something thicker and firmer can be managed. The

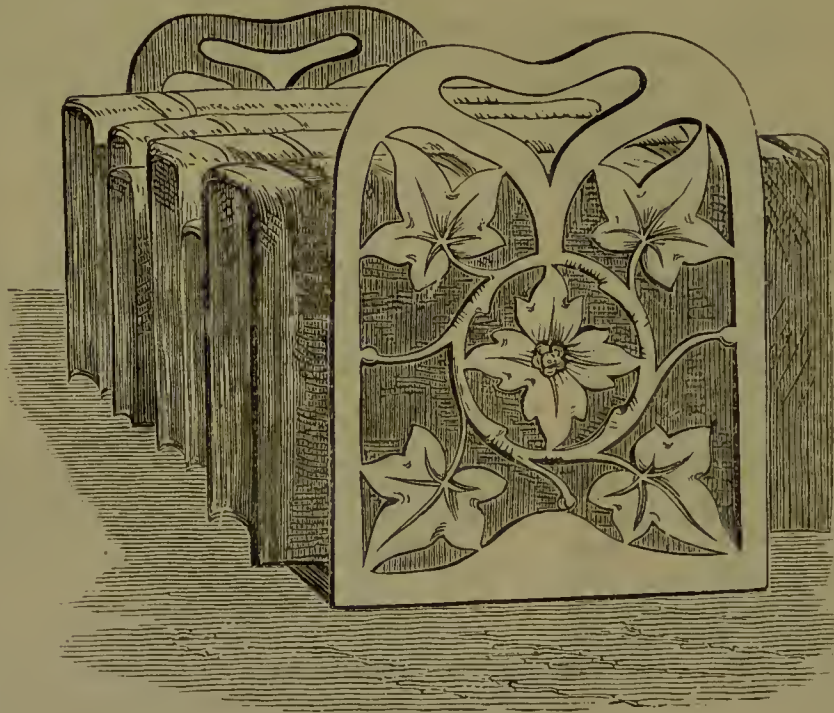


Fig. 7.—BOOK-SLIDE.

saw-blade must first be threaded in the frame. The thumb-screw at the lower part of the saw must be loosened, the saw must be slipped down as low as the opening will allow, in such a direction that the teeth slope downwards. The other end of the saw is then fixed. In most frames it is of no consequence which end of the saw is fixed first. If the frame is to be worked in a reverse direction—that is, with the handle below the board—the worker must remember still to set the saw so that the teeth point towards the wood.

The two arms of the saw must be pressed together before the second clamp is fixed, in order that the saw-blade may be sufficiently tight. Some judgment is necessary to ascertain how taut the saw should be; for if too tight, it will snap directly any work is done with it; and if not tight enough, it will

so sway from side to side that it will be impossible to cut a straight line. When twanged between the thumb and finger, a well-set saw should give forth as musical a sound as the string of a harp or other instrument.

The above is all that is necessary when an outside edge is to be attacked; but when the inside lines of a design are to be cut, it will be necessary to thread the saw through a small hole in the wood before securing it in the frame.

The wood to be cut is laid upon the cutting-board, and firmly held down by the left hand. The worker must be seated slightly to the left of the board, and must then work the saw up and down strictly in a perpendicular direction, but must beware of applying perceptible force to it, or managing it in a series of jerks. Much of the secret of good fret-sawing consists in the steady, even touch with which the saw is worked. Just at first the beginner will find some difficulty in deciding where to drill the holes through which the saw is to be passed to make a start, and nothing but practice can fully teach this. As a general rule, these

should be made in the middle of any section of the wood that will fall out when the cutting is completed, but there are many details connected with this that can only be learnt by practice and experience. It is advisable to cut the wood approximately into the shape of the article to be made before pasting on the design, and to do this it will not be necessary to thread the saw through any one of the holes in the wood.

In Fig. 7 will be seen a completed book-slide for which we give full instructions, many of which apply equally well to many other articles. The worker who is just beginning should choose some soft wood, such as pear-tree or sycamore, not more than $\frac{3}{8}$ of an inch in thickness. The present plan of

printing fret-saw patterns solid has this advantage, that even the most careless of workers can scarcely succeed in cutting away any portion of the wood that should be left to form the pattern. When they can be obtained, patterns printed in colours instead of black are more convenient, as the black is apt to be indistinct, owing to its being so nearly the colour of the saw itself. Where, however, the design is drawn by the fret-cutter, it is not always possible to make it solid, hence it is well to mark with a piece of

coloured chalk such portions as have to be cut out, so that no mistake can be made. Marks of this kind, which are all sufficient for the purpose, are shown at A A in Fig. 8. At B B are seen two round holes, which show where the drill is to be used to make a starting-point. The saw is first threaded through one of these holes; then a cut is worked to the nearest edge of the design, and is taken rather in a slanting direction than quite straight. Follow the outline till a sharp angle is reached, such as that between the leaf and the stalk. Here it will be necessary to take the saw back to the point from which it started, as it is im-



Fig. 8.—DETAIL OF BOOK-SLIDE.

possible to cut so sharp an angle without working back to it in the other direction, so that the two cuts meet at that point. Otherwise, the saw forms a round instead of an acute cut; and this, to the eyes of a connoisseur, will spoil the best of work. The merest touch of oil may occasionally be applied to the saw, should it show any signs of working stiffly; and as the piece loosened by the cutting becomes ready to drop, the worker must lightly support it with the left hand to avoid tearing or wrenching it loose as the end is approached.

In Fig. 7 the book-slide has been worked up by carving after the fret-cutting has been completed, but it is well for the amateur to content himself by confining his attention simply to the cutting at

present, leaving more elaborate work till more experience has been gained. The bracket in Fig. 9 is like the book-slide in being worked up with a slight amount of carving. Brackets with one shelf, such as that illustrated, are always made in three pieces. That for the back is shown in Fig. 9; the support for the shelf (which consists of exactly half the lower portion of the design given here) and the shelf itself (of which an outline is given in Fig. 10) require only to be sloped at the edges with the saw. In Fig. 11 is shown one side of a cover for a blotting-book, which requires little finish beyond the usual filing and smoothing. Such a cover is always made up upon a solid panel, covered with plush or velvet. For this reason it is not necessary for the fret-wood to be more than $\frac{1}{8}$ of an inch thick; and when a duplicate of a pattern is required of such thin wood, it is often advisable to cut both at once. This is managed simply by pasting a piece of paper to the back of one of the panels of wood. Then paste the paper again and lay the second panel on it, leaving it to dry before cutting. The two panels may be easily separated with a knife when the cutting is finished. It is quite possible to cut two or three slices at once by simply cramping them together; but the pasting is the wiser plan—at any rate, for a novice to follow—as they are less likely to slip. The cover of a book such as this looks far better when cut out of white or light-coloured wood, such as

sycamore, holly, or satinwood, than when a dark wood is used such as mahogany. Figs. 12 and 13 show suitable designs for ornamenting the tops and

bottoms of book-shelves, or similar pieces of furniture, which offer no special difficulty in the cutting, and may be useful for many other purposes. They are admirably adapted for cutting out in oak; the more elaborate patterns should be cut in not less than $\frac{1}{2}$ inch thickness, as otherwise they will be too delicate to stand the somewhat hard wear to which they must necessarily be subjected.

Finishing the Work.—As before said, as soon as the cutting is finished, the wood must be carefully overlooked and finished off with the file, taking off all rough edges and any snaps and splinters that may have been left by the saw. If the wood is to be polished, it is necessary to size it first, after ascertaining that the surface is quite smooth. The size may consist of ordinary glue: spread this evenly over the surface, leave it till dry, then rub down with sand paper. The polish must be applied with a pad, composed of cotton-wool over which is smoothly spread a piece of soft linen. Oil the pad

slightly, and only sufficiently to enable it to slip easily over the surface of the wood. This done, rub in the polish, a very small quantity at a time, with a circular movement, moistening the pad occasionally with oil; let it stand when the wood is thoroughly bodied—that is, when all the fissures

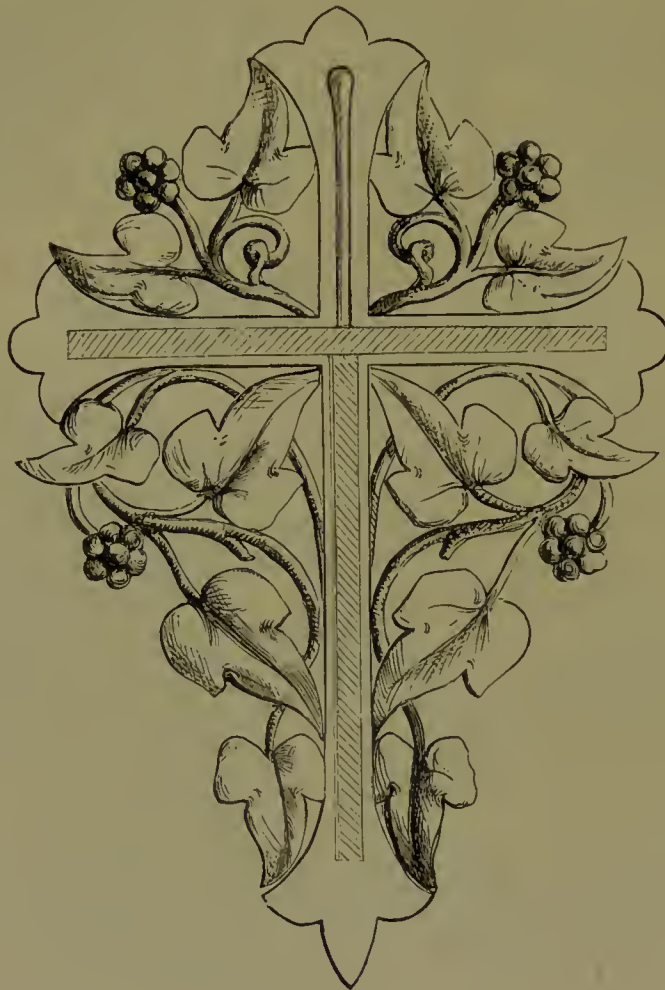


Fig. 9.—BACK OF BRACKET.



Fig. 10.—SHELF OF BRACKET.

and lines in the grain appear to be well filled up. Then polish again, using less and less oil until the surface is smooth and bright all over, with no dim

polish without elogging some of the fine part of the work, which will have to be cleared afterwards. On the other hand, it is difficult to altogether prevent



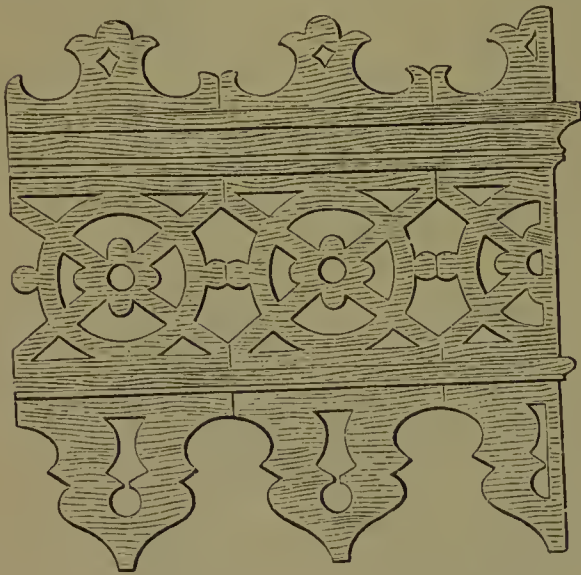
Fig. 11.—DESIGN FOR COVER OF BLOTTING-BOOK.

effect when the rubber is moved over it. Finish by taking a clean pad and polishing with oil and methylated spirit, using very little of the latter. Work in a room that is warm and as free as possible from dust. Some workers are of opinion that the wood should be polished before being cut, and this certainly saves a great deal of trouble, it being difficult to

the occurrence of little roughnesses and defects in outline whilst sawing, and the repair and dressing down of these with files and glass-paper is not so easy in ready-polished wood. Every amateur will learn to solve these difficulties in the way that best suits his own "cut," which has a distinctive character in every one who does much work of this kind.

If the wood is such as to require varnishing only, size it first in the way described, and lay the varnish on with a small camel's-hair brush, being careful to spread it thinly, not putting more in one part than in another. Probably three coats will be needed, but the amateur must remember that, unless the first one is perfectly smooth, no additional layers will render the faults less prominent, but will, on the contrary, be likely to render the uneven spreading of the varnish more apparent. The best varnishes for the purpose are clear, and enable the figure and grain of the wood to be plainly visible through them. One coat must always be allowed to dry

Sawing Metals.—The sheets of metal sold for fret-cutting are so extremely thin, that they cannot well be worked alone, as they are apt to become curled and bent out of shape. To obviate this, the sheet of metal should be laid between two thin layers of wood, any rough kind answering the purpose. It is very essential in cutting metal that the saw should be kept well oiled. A good plan, and one followed by professional fret-workers, is to lay the metal between two sheets of oiled paper. The metal, paper, and wood must be clipped together with small nails or pins, the design itself fastened on one side of the wood. In purchasing



Figs. 12 and 13.—SIMPLE FRETWORK PATTERNS.

before the next is put on. When a dull surface is required for the wood, it merely needs rubbing with linseed oil (raw). A simple staining may be made by dissolving bichromate of potash in water. This is more appropriate for oak than for any other wood; but it is hardly worth while for the amateur to prepare any stains himself, as they can be had ready-made to suit any and every kind of wood. The ebony stain, as before stated, is far more successful when applied to soft wood than when the actual ebony itself is used by the fret-worker. Oak may be darkened, so as to pass for a very good imitation of old oak, by brushing it over with a solution of iron and vinegar, or simply by laying the wood in an air-tight box, in which is placed a saucer containing some liquid ammonia. Wood may be made as dark as ebony by coating it with a strong decoction of logwood chips; when dry, saturate it with iron and vinegar, as above described.

saws for cutting metal, it is advisable to mention the purpose for which they are required, as a harder temper is needed for this material than for wood.

Making-up.—It is by no means a *sine quâ non* that the fret-sawyer should make up his own work into small articles of furniture, as most dealers guarantee to do this part of the business for him when at all complicated. As a rule, and for smaller things more especially, nothing more is needed than a few touches of glue and a few nails and screws. For the further embellishment of the cutting there are infinite varieties of fancy brass, oxidised glass, and jewelled nails, key escutcheons, handles, beadings, brass and oxidised corner ornaments, rosettes and plates for initials, and many other similar ornaments, which all help to make the task of finishing an easy one, and give ample scope for the play of individual taste.

GARDENING FOR NOVEMBER.

The Lawn.—Continue to keep the grass as clear as possible of falling leaves; it may appear to be needless work to be doing this so often; every other day is none too frequent, however, when the weather permits. If left for a few days, the worms will soon be busy in pulling them into the ground as far as they can: this gives more trouble when sweeping, as the broom will not move them easily, and oftentimes they have to be pulled out by the hand. After heavy rains they will also be beaten down, and afterwards be difficult to move at the time of sweeping. When the leaves have fallen, a thorough clean-up should be set about, and after that the first dry day taken advantage of to mow the lawn for the last time. We generally like to do this last mowing when the grass is as dry as possible; this usually happens with the wind in the east, which soon gives a crispness to the turf, resulting in the machine doing its work well, and the lawn will then look clean and close for the rest of the winter. All the odd corners too, which the machine will not cut, should now be cut by either a scythe or a pair of shears.

After this mowing the machine must have a good cleaning, be well oiled, and then placed in a dry place until wanted again in the spring. Not only should the bearings be oiled, but the cylinder also, upon the cutting edges and the bottom plate; these parts will then be well preserved against rust while not in use. When the room is very limited, the handles of the machine should be taken off; the other part will then take but little room. Take care also of the spanners, the oil-can, and other belongings, such as duplicate parts of any fixings. The scythe, too, may be taken off its handle and well oiled, and then bound up in brown paper, and the clipping shears oiled; this work pays for doing, for not only do the tools last longer and cost less when well cared for, but the work itself is done much easier and in a more satisfactory way; the scythe, in particular, is a dangerous instrument if proper care of it be not taken; and it must be kept out of the way of young children.

The Flower Beds.—There will not be much to do amongst these now, if the work of the past month was carried out in due time. A few may need replacing if they are found not to be thriving; some with a little water given them when the soil is dry will be greatly improved. A light stirring of the soil will, however, do good, and whilst being seen to any weeds or leaves should be removed; so also should any decaying foliage upon the plants themselves. Any spare plants should be used up after

this for bare places; even if they only give a green appearance during the winter, and do not afterwards flower, it is better than seeing the ground unoccupied until the following spring.

Shrubs, Cleaning up amongst, after the Fall of the Leaf.—As soon as all of the leaves have fallen, which will generally be the case early in November, a thorough clean-up amongst shrubs and borders should take place. Unless the leaves are specially required for protection, or for reserving to make leaf-mould for pot plants, or special cases in the open border, it is best to lightly dig them in amongst the shrubs. A little care is needed, in doing this digging, not to injure the roots of the shrubs more than possible; close around the stems it should be done very lightly, merely stirring the soil to freshen it. The chief part of the leaves can be buried between the shrubs, and with considerable advantage also, as the soil will thus be enriched as they decompose, and thereby afford a better rooting medium to all the plants around. It is never advisable to rake off all the leaves unless absolutely required, for in so doing the shrubs are partially deprived of their future nourishment as provided by Nature. The soil between the shrubs will, in burying the leaves, need a little more removal; what there is to spare should be spread close up to the stems, to afford a little more covering to the roots.

In digging amongst shrubs at this season of the year one decided advantage is gained, especially in soils that in any way suffer during a drought. It is that of thus affording a free passage for the rains afterwards to percolate the soil, and reach the roots that are farthest removed from the surface, and so to be a means of greater sustenance to the shrubs another season. When the surface soil is not broken up from year to year, it becomes hardened, and the rainfall instead of penetrating the soil, as it should do, runs off to lower quarters in any case where the ground is at all sloping. In this way it is not difficult to see the advantage that accrues to the shrubs when the ground is broken up, even if a few of the surface roots are injured in the operation.

As the work of digging proceeds, all dead wood and straggling branches should be cut away, so as to keep a good appearance and the shrubs somewhat uniform, without being formal. If any stakes are necessary as supports, they should be examined as to their security, and new substituted for old if needful, so as to safeguard as much as possible from injury in the event of snowstorms. When all of this work is completed, the margins of the shrubs should be seen to, and where any flowering plants

have been planted to flower in the spring during the previous month, a surface stirring of the soil will do good; the grass verges should also be cut, so as to obtain a clear edge. Where any shrubs are disposed to encroach upon the grass, the latter will be considerably weakened; in such cases some of the edge may with advantage be cut away to make room for the shrubs.

Conifers (a short term for coniferous plants) are indispensable subjects in any garden; but where the situation is within the radius of the fog and smoke from our large towns and cities, the chance of variety is considerably lessened. Those in the following list that are best suited for town and suburban gardens are marked thus (*), and may be planted with every prospect of thriving well. **Araucaria imbricata* (the Chili Pine) is best grown as a specimen plant, and should never be surrounded with other shrubs, otherwise its beauty is marred, and the lower branches injured by the encroachment of other things.

Amongst the Fir Tree family the following are good growers, and make noble trees after a few years' growth, viz.:—*Abies Douglasii*, a rapid grower of dark green colour; *Abies excelsa* (the Spruce Fir), suitable for planting as a background; *Abies Smithiana*, a pendulous-growing variety; *Picea cephalonica*, a noble tree of erect growth, and glaucous green; *Picea nobilis*, one of the finest of all, but of slow growth; *Picea Nordmanniana*, a strong grower, pale green in colour; *Picea pinsapo*, a compact-growing kind, very handsome; **Pinus Austriaca* (the Austrian Pine) may be fairly called everybody's Fir Tree (it does well in nearly any soil and locality); **Pinus Cembra* (the Swiss Pine), an erect grower, and very compact; **Pinus excelsa*, a free-growing Pine with glaucous green foliage; *Pinus insignis* needs a warm spot, but is of noble growth; *Pinus strobus* (the Weymouth Pine) and *Pinus sylvestris* (the Scotch Fir) are both hardy and good sorts for general planting. *Wellingtonia gigantea* (the Mammoth Tree) is a noble plant as a specimen upon grass. The Cedars are useful and distinct trees; the two best are **Cedrus Deodara* (The Deodar) and *Cedrus Libani*. The first-named should be chosen in every case for gardens of moderate size.

The Yews are amongst the most useful of all evergreens for the garden, whether in a small state or when grown into trees of good size; the *English Yew in its green form is one of the best and hardiest shrubs we have; the Golden variety of the same should by all means be planted: its young growth assumes quite a deep golden colour, and makes a beautiful object in any garden; the *Iris Yew is of erect growth and takes but little room: of this there is also a golden variety. All of

the Yews bear cutting, to keep them within bounds; and thus treated may be made to assume various forms, to the taste of the owner. The *Arbor vite*, both the common and the dwarf golden kinds, are useful compact shrubs. *Cryptomeria elegans* is a most useful, distinct, and ornamental shrub of bronzy colour and close growth. **Cupressus Lawsoniana* is another valuable shrub for any garden, and of elegant growth; of this there is an upright form which is quite unique, also another called "Silver Queen," equally valuable; *Cupressus nuthkaensis* is a perfectly hardy evergreen tree, of tall growth. The Common Larch is most suitable as backgrounds or shelters, as it grows rapidly; *Retinospora obtusa* and *R. plumosa* are evergreens from Japan, with light shining green foliage; both kinds are also to be had with beautiful golden foliage; these are very neat and compact plants for small gardens, amenable to annual clipping so as to keep them within bounds; **Salisburia adiantifolia* (the Maiden-hair Tree) forms a handsome tree, with leaves similar in shape to the pinnæ of the Maiden-hair Fern, hence its name; *Taxodium distichum* (the deciduous Cypress) is of very elegant fern-like growth; *Thuja gigantea* is of sturdy upright growth, and makes a useful tree for a spot where height is desirable; *Thuja Vervaneana* has golden-tipped foliage, which in the spring looks very bright. The foregoing list of Conifers is a condensed one, but it includes nearly all of the best things of each family represented therein; they may be obtained of any respectable nurseryman.

Plants for Edgings to Walks.—These deserve a little notice and recommendation, a few things not being employed for the purpose so much as they deserve to be. One of these is *Exonymus radicans variegata*, which has silvery variegated foliage about the size of the Common Myrtle. It makes an excellent edging to walks or shrubs, and even to flower-beds when needful. It can be cut in fairly close every season, when the growth is nearly completed. It is quite a contrast to the Common Box edging, and should be planted as a change thereto. Not that we for one moment condemn the latter; it is a valuable edging plant, but change is appreciated when utility is not sacrificed to obtain it. The foregoing may be safely planted in suburban and town gardens. The dwarf-growing kinds of Heaths are suited for the same purpose, looking well with their bright green foliage even, but better still when in flower. The Lemon-scented Variegated Thyme makes a capital edging plant to both walks and borders, and is equally as useful as the green kind in the kitchen for flavouring purposes. The Common Thrift (*Statice Armeria*) is a very close-growing and hardy plant, thriving where many

things will hardly live. For edgings where the soil is somewhat higher than the paths, or so much sloping towards them as to be troublesome after heavy rains, the best thing to do is to save all the elinkers and broken pieces of stone. These, with either large flints or small brick burrs, obtained from a brickyard, should be arranged along the edge to raise it, so that the soil may be more nearly level; then some Stone-crops (*Sedums*), previously alluded to, can be pricked in amongst them; these will soon fill up the erevices, and look well.

The Chrysanthemum.—This flower may be fairly termed the "Queen of the Autumn," for during the past month the earliest kinds will have been making a good display, but now, in the gloomy month of November, they will nearly all be in their full beauty, and still continue to make a good show onwards to Christmas. Thus the dark days are brightened, and both employment and pleasure are to be found in this direction, when at times it is impossible either to work out of doors with any comfort, or to be able to derive so much enjoyment from the same source as during the past few months.

The chief point to observe, now that the blossoms are fast approaching perfection, are to exclude the frost from the house. If this is only just accomplished, it will help to save the flowers; but if 5° above freezing-point can be maintained, they will be safer still. The next point is to keep down damp as much as possible by admitting fresh air to dispel the superfluous moisture, whenever the opportunity is afforded by the favourable state of the weather. When any of the florets are found to be damping off, they should be carefully removed with a pair of tweezers, and any decaying foliage picked off daily as soon as observed. Watering should still be done early in the day, and only sufficient given to answer the purpose for which it is intended. If there are any signs of the petals being eaten, it may be attributed either to the presence of earwigs or caterpillars, chiefly the former; these are best caught at night, or trapped in a small flower-pot into the bottom of which a little hay or moss has been placed; the other insect is best caught during the daytime by a close search upon the underneath surface of the leaves.

As soon as any of the flowers show signs of hanging over by reason of their weight, a little support should be given them with a slight stick, or by a tie to that already in the pot, if it be of sufficient length. Whilst they are in flower, note should be taken of each kind, to see that it is true to name, so as to save having too many duplicates afterwards, and to make the collection as complete as possible. Any side shoots that may now be pushing forth should be allowed to remain, so as to obtain a few later

flowers of smaller size, which will be found useful for cutting. If any great quantity of blooms are cut for arranging in vases, it is best to allow them to arrive at perfection on the plants first, as afterwards the centres do not open well. For foliage to arrange with Chrysanthemum blooms, nothing surpasses the common evergreen *Berberis* (*B. aquifolium*); the bronzy colouring of its leaves is quite in character with many of the Chrysanthemums, and it lasts a long time in good condition.

The varieties of the Chrysanthemum are now almost legion, such a number of new, and in many cases improved, kinds having been introduced into commerce during the past few years. A list therefore of some of the best sorts may assist those who contemplate their culture, or wish to add to those they already possess; but when a selection has to be made from the trade catalogues, the matter becomes most perplexing to those not well acquainted with Chrysanthemum lore.

The best for growing (selected from all classes) upon walls out of doors and in the open borders, to flower early in the season, are * La Vierge, George Glenney, Mrs. G. Rundle, Mandarin, * Early Red Dragon, Madame Desgrange, * G. Wermig, * Mrs. Hawkins, Alice Butcher, Flambeau Toulousain, * Nanum, St. Mary, Alexandre Dufour, Isidore Feral, Margot, * Roi des Précoees, Little Bob, James Salter. Those marked * are the very earliest, and may be had in flower during August and September.

The following are best for growing in pots, incurved varieties being those with compact globular flowers:—Golden Empress, Empress of India, Princess of Wales, Alfred Salter, Golden Queen of England, Queen of England, Prince of Wales, Mrs. Heale, Barbara, Prince Alfred, Jardin des Plantes, Mrs. Dixon, Mrs. G. Rundle, Mr. Bunn, Princess Teek, Novelty, Lord Wolseley, John Salter, and Venus.

The Japanese type of Chrysanthemum, with larger flowers and less formal shape, are now grown in even greater numbers than the foregoing; in fact, they are now considered fashionable flowers. The best are Sunflower, Jeanne Delaux, Avalanche, Edwin Molyneux, Boule d'Or, Val d'Andorre, Mme. C. Audiguier, Maiden's Blush, Stanstead Surprise, Ralph Brooklebank, Belle Paule, M. Bernard, Etoile de Lyon (very large), Elaine, Mme. J. Laing, Mlle. Laeroix, Moonlight, Thunberg, M. Freeman, Peter the Great, Fair Maid of Guernsey, Source d'Or, Mme. de Sevin, and Roseum Superbum.

The Anemone-flowered kinds, so called from their resemblance to that flower, are quite distinct, having quill-like florets; the best are:—Fleur de Marie, Gluek, Lady Margaret, Prince of Anemones, Mme. Goderau, Empress, Fabian de Mediana, Minnie

Chaté, Mme. Bertha Pigny, Sœur Dorothée Souillé, Mdle. Cabrol, and Marguerite Villageoise.

The Pompon Chrysanthemums, with their clusters of small flowers, always make a good display and last a long time in good condition. The best are Rose d'Amour, Marabout, Mdle. Eliso Dordan, Mdle. Marthe, St. Michael, Antonius, Astrea, Calliope, Mme. Montels, Cedo Nulli (white, golden, and lilac kinds), Mr. Astie, Roso Travenna.

The single Chrysanthemums (not the Marguerites, so called) are now extensively grown for decorative uses; they flower most profusely, last a long time in good condition, and are very suitable in a cut state for vases or bouquets, and similar purposes. Those now named are a good selection:—Mary Anderson, Jane, Miss E. Terry, Admiral Symonds, Miss Rose, David Windsor, Miss Cannell, Lady Churchill, Helianthus, America, Mrs. Wills, and White Perfection. This is a class of Chrysanthemums which has a great future before it.

Tender Bedding Plants.—By this we mean such as can be safely grown in a cool greenhouse during the winter months, where the temperature in the coldest weather does not fall lower than 37°, or 5° above freezing-point. In order to preserve them in as good a condition as possible, all decaying leaves should be removed before any not affected become like the others. Very little water will be needed until new growth commences in the spring, especially for the Geraniums; these, in fact, had better be kept almost without any water. The closer to the glass these young plants of all kinds can be kept, the more sturdy will they become; taking the precaution not to let any touch the glass, or the foliage will be damaged when the first sharp frost comes, and the under surface of the glass gets frozen.

The young plants of Geraniums should not be allowed to flower, otherwise it will weaken the growth. Old plants of Geraniums should not be left in the open ground after the end of October, if they are wanted for keeping through the winter for the same purpose another season. When taken up from the borders, they should be brought under cover and left in a dry place for a few days, then when the superfluous sap is somewhat exhausted, all of the leaves of any size should be cut off, and any decaying wood also; the roots should likewise be pruned back. If flower-pots are scarce, and room also limited, several plants may be planted in one pot of fair size, or in boxes with a moderate amount of soil. One watering may be given, but no more for a long time, as the drier they are afterwards kept, the better will they be preserved until young growth again commences. Plants kept in this manner will give a good supply of cuttings the following spring if

needed, otherwise they will, after a fair growth has been made, flower freely, and make a good show as soon as planted out again in the following May. These old plants stand a few cold nights better than young ones, and if slightly caught by frost, have wonderfully good recuperative powers. Bedding Calceolarias in cold frames should have a little ventilation in fine weather, never be allowed to suffer for want of water, and lightly protected against frost.

The Kitchen Garden.—As early as possible in November the remaining portion of the root crop should be carefully lifted, and placed under cover in as cool a place as possible, with the exclusion of frost; the only other essential except that of not being in a too dry or draughty position. The writer remembers an instance in which these crops were stored upon a boarded floor with the opposite of good results. The best place for Carrots, Parsnips, Beetroot, and Salsafy is a cellar where paved with bricks, and the inroads of rats prevented, having also means of ventilation.

Beetroot is often recommended to be lifted earlier in the autumn, but, like other root crops, it also greatly benefits by being left as long as possible in the ground; the last few weeks often help the crop greatly, especially after a dry season in the summer. This root (Beet) should be lifted very carefully, so as not in any way to injure the tapering roots; for the sounder they are when stored away, the better will they keep. Some would add, the better will they boil when cooked; but this latter failing may be easily avoided by merely putting the roots into boiling water instead of cold; further than alluding to this fact is not within our province to enter. The tops of the Beet should not be cut off, but merely twisted asunder, each leaf generally coming away by itself. We strongly advise the extended cultivation of this vegetable; it is one of the most satisfactory crops that can be grown (in a small kitchen garden even, where many things cannot be attempted at all), and one of the most profitable also, when comparing the ease with which it can be managed with the price at which it is sold. It is one of the best of all roots to keep, and may easily be had in good condition for salads up to the end of the June following.

Carrots and Parsnips do not need quite so much care in lifting: in fact, if not lifted at all until the spring the latter vegetable will take no harm, but Carrots are liable to be attacked by wire-worm if left in this way. No washing of the roots should be attempted on any account until they are required for use, nor should the dirt even be rubbed off in too cleanly a manner. When they are brought under cover, they should, after laying

for a few days to partially dry, be stored up together on their sides, with a little fine soil laid between each layer. In this way it does not take much room to house a good crop. During favourable weather a few Turnips should also be taken up, always selecting the largest ones; and where Jerusalem Artichokes are grown, a portion of this crop as well, with a little litter thrown over the rest of it that remains in the ground. It is not well to take up the entire crop of this latter esculent, as it keeps in much better condition in the soil; when digging it up, however, a very close watch has to be kept for each root, or else many will be passed over, each one being generally enveloped in a mass of dirt. As soon as the top growth of this Artichoke has been caught by the frost, it should be cut off close to the ground, and then burned up with other refuse.

Celery should soon have a little protection given to that part of the foliage above the soil, but before doing this, it is possible perhaps, in some cases, to add a little more soil first. Dry litter is the best thing to use, such as the short straw from a stable, or fern bracken, where it can be had on country commons for the cutting. This should be worked in between the leaves of each one, and in this way nearly covering them, but without much weight bearing them down. If well earthed up with a good quantity of soil, there will not be any danger of frost penetrating from that direction.

Where Spinach is keeping well, some of the strongest leaves may still be picked, removing also any that are decaying. A light stirring of the surface with a hoe will help this crop, especially if it has been beaten down by hard rains. Lettuce and Endive should be treated in a similar way, with a light dusting afterwards with soot and lime. If the first-named is not yet planted out where it is to stand through the winter, no time should be lost in seeing to it. A warm sunny position should be chosen; and where the ground is already pretty fully occupied, a double line may be planted closely together near to the foot of a south (or from that to west) wall, then transplanting them in the spring. Young cabbage plants should have some soil drawn up to their stems, forming a ridge in a line with the plants. This will protect the stems both against frost and from injury by slugs, as well as holding them more securely in position when in exposed situations.

All of the decaying leaves should be removed from the stems of Brussels Sprouts, taking them away entirely: this will tend towards keeping the sprouts in better condition by keeping them dryer; the old leaves droop down if left upon the plants, and cover the sprouts, hence decay in the latter will eventually set in before they are hardly fit for use. Other green crops should be treated in a similar way, but

are not of quite so much importance as the Brussels Sprouts. Cauliflowers that are still remaining and of good size should be pulled up when there is any signs of frost, and those only partially grown be protected by folding over the upper leaves close upon the head itself.

Parsley, which is always appreciated, and probably more so from now onwards through the winter and spring months, should be well looked after, the soil kept stirred and free from weeds. If properly managed in picking, there need not be many decaying leaves amongst this crop, but the practice usually is to pick the young partially-grown leaves from the centres of the plants. In this way there is a great waste, for not only is the advancing growth in a manner checked by this treatment, but the leaves which ought to have been picked first will begin to look shabby, and are discarded as not fit for use. This and other crops of a dwarf kind should be kept quite free from falling leaves, which will soon have an injurious effect if left to themselves. As soon as all of the latter have fallen, they should be raked up quite clean in the kitchen garden, both from under fruit trees and bushes, and in the open as well. After this has been done a good strong application of soot and lime around the stems of the trees and bushes, upon the soil, will kill many slugs and other insects prejudicial to plant life. When the Gooseberry caterpillar is troublesome, this should more particularly be done, and after being applied should be worked into the surface soil by the use of the rake.

All kitchen garden crops that have yielded their return or are of no farther use, and probably caught by frosts also, should be cleared off at once. There cannot be any possible object or gain in leaving such to decay upon the land, preventing the action of the air upon the soil, and looking most untidy also. The best way is to remove them to the rubbish heap, and then assist decomposition by application of lime freshly slaked: this will also prevent any offensive smell arising in the meantime.

Pea boughs and Bean stakes can be used the second year if taken care of during the winter, being housed as soon as of no farther use in a dry outhouse; the latter do not take up much room when tied up tightly in bundles. In using them the second season, they should be mixed up with new ones, to give more security. Some of the Scarlet-runners and French Beans may not possibly have all been picked, through being overlooked; if any are left and are fully matured, the seed may be finally ripened in a dry place, and preserved for sowing another season.

Tomatoes that are still remaining in an unripe state will require a little more warmth to finish them

off; any that show signs of decay should be used up at once. Where Potatoes are grown, the store should be occasionally examined, to see that none, through having the blight peculiar to them, are in any way affected.

The Greenhouse.—It requires a considerable amount of ingenuity to make the utmost use of the room at disposal at this season of the year. It can be done in a manner somewhat easy without doubt, but the object that must be aimed at is the health and future well-being of the plants. When overcrowded to any great extent, there is always a danger of fungoid growth, which proves detrimental to plant life. To avoid the spread of this as much as possible, the plants ought to be frequently re-arranged, introducing to a better position for a while those which have not had so good a one, and *vice versa*. When this is being done, the surface soil, where green or scaly with any vegetable growth, can be lightly stirred, and then, with a little silver sand added to it, again pressed down firmly. Some of the larger plants should be so arranged as to allow of smaller ones being placed between them. The introduction of a few shelves will also provide a deal of extra room, many plants thriving better in such positions than in any other way. Some plants, again, will do with only a moderate amount of light, and yet put up with a moist place: such are the Camellias, which at all times are impatient of warmth and a dry state of the air. Some plants of tall growth can perhaps be stood upon the floor, any makeshift being made and appearances sacrificed for a few weeks, until the Chrysanthemums can be removed to make more room for the usual occupants of the house. In watering whilst overcrowded, extra care is essential both in not entirely overlooking any plants, as well as in distinguishing between the requirements of one kind and another.

Keep a close watch upon any attack of green-fly, and take means as previously advised at once. Young plants of Cinerarias are sometimes attacked upon the under surface of the leaves; when thus troubled, the best remedy is tobacco-powder, lightly used. Any plants now in flower, other than the Chrysanthemums, should have good positions where they can be seen to advantage, and where any decaying petals or single flowers may be removed as soon as observed. No potting should at this season of the year be attempted, unless it is the result of an accident. The plants do not root freely now; fresh potting would therefore be detrimental.

The Roman Hyacinths previously alluded to, and advised to be grown, will now be growing away pretty freely; some of the forwardest should have as much warmth as possible: thus treated, they will

prove useful when the Chrysanthemums are past their best, and last a good long time whilst in flower throughout December and January. They are about the easiest of all bulbous plants to grow for winter flowering, and rarely fail to give a good return in flowers at a time when sweet-scented ones are scarce. They will succeed very well upon the shelves near the glass.

Cold Pits and Frames.—These, although without any artificial heat, but with a covering on the glass at night, may with care be made suitable for many semi-hardy plants, and some also that are grown in cold greenhouses. If a fairly good depth can be obtained inside for plants, say of one foot or so in height, many things may be grown. For instance, where there is a greenhouse at present chiefly occupied with Chrysanthemums, the cold pit can be for the time being partly filled with plants to take their places, such as Cinerarias, Calceolarias, Roman Hyacinths, and small plants of Azaleas and Camellias, if a little more depth at the back can be arranged. Of other plants which can be preserved in cold frames all the winter, the Auricula, the half-hardy Primroses, and the other Hyacinths, Tulips, and Narcissi are examples. The chief point to observe is the keeping down of all damp as much as possible. This can be partly done in two ways—first by pitching the frame forward to a sharper degree, so that all moisture passes off freely both outside and inside; and secondly by a layer of dry soil or ashes over the surface. Ventilation should be given on all favourable occasions, which will hardly fail to be every day.

The Vinery.—In some cases there will still be some grapes hanging upon the vines; with these more than usual care will now be needful to keep them in good condition. A free circulation of air should be maintained whenever the weather is favourable: this is accomplished much better when there is a little fire burning, with a slight heat in the pipes. Almost daily watch should now be kept for any symptoms of decayed berries, and remove them at once; being careful at the same time not to rub the others, so as to spoil their appearance when cut for dessert. Now that leaves from out of doors are not so readily available for dishing up fruit, some of the vine leaves may be picked for the purpose. These must not, however, be taken indiscriminately from the vines: those nearest home to the spur will possibly be the most attractive in size and colour, but they should not on any account be picked. Being the strongest and best matured, they assist greatly in strengthening the back buds for another season as the sap declines, and should always be

allowed to remain as long as possible. Leaves for this purpose should be taken from the points of the growths or from the lateral shoots. Where there is any superfluous amount of the latter, they should be cut away, especially if the wood is still green; the main shoot should also be shortened when the wood is not turned to a nutty-brown colour, which denotes thorough ripening. In this way more light will be admitted, with less danger of any undue amount of atmospheric moisture.

The border, where inside, should not be watered until all the grapes are cut; the outside border should be covered with a light dressing of the best of the fallen leaves from the trees. Oak and Beech leaves are the best for this purpose. Upon these leaves a thin layer of long stable manure or litter should be shaken, to keep the leaves from being blown about by the wind. When, through force of circumstances, plants have to be stored in the vinery at this period of the year before the grapes are all cut, the utmost care will be needful to prevent harm to the fruit. Watering should only be permitted so far as it is absolutely needful for the vitality of the plants, and should always be seen to early in the day, the plants being kept as far away from the ripe grapes as possible. The vinery may, however, be turned to a good account for the ripening of any flower or vegetable seeds, being at the same time a good place for doing any kind of work under cover of a dry character. The backward Tomatoes will also keep very well in the vinery, so also will any bulbs and tubers for the first few weeks after being lifted from the borders. In this way, by a careful selection of subjects, the vinery may be utilised in a profitable manner until the grapes are cut, when it can be used as an ordinary greenhouse.

Fruit Trees.—The planting of newly-purchased trees and the removal of others, either for convenience or utility, should be proceeded with as early as possible in November. This work is always more satisfactorily performed if taken in hand before any severe frosts ensue to cause hindrance in its progress. The trees or bushes should not be left out of the ground any longer than can possibly be avoided, or the roots (especially the fibrous ones) must inevitably suffer to a serious extent. In order, therefore, to guard against this as much as possible, the ground should be well prepared beforehand, and all arrangements made, save the planting itself. Then secure the trees fresh from the soil in which they have been growing, and re-plant without any delay, and always give a good watering to settle the soil around the roots.

In the case of standard trees or any that have suf-

ficient head upon them to be influenced by the wind, some staking will be necessary. This should not be done with a single stake, but with three set in a triangular manner, converging to the point where there is the best convenience for securing them to the stem. Some old canvas or a band of hay should be bound around the stem first, to prevent any injury to the bark; then the stakes may be tied tolerably tight, so as to prevent any friction, but not so tight as to leave no room for future growth or expansion. The advantage of three sticks or stakes is that they afford greater security until the tree has made a sufficient number of fresh roots to stand alone, and in the fact that no fear need be apprehended of injury to the roots, whereas, when only one is used, there is a possibility of its occurring when being thrust into the ground.

The distance at which fruit trees are planted between each other must be duly considered: it is a great mistake to plant too thickly; this is, however, a common error, but one that cannot be too strongly condemned. Not only is it a waste of money in the first instance, but in a short space of time the trees, through being too much crowded together, become unfruitful by reason of the exclusion of air and the genial influence of the sun in ripening the wood. Thus the soil will itself soon be exhausted, with the result of decrepitude and premature decay, almost before any satisfactory crops of fruit have been obtained. Apples and Pears when planted in the open should not be any closer together than twelve or fourteen feet for the average of gardens: in fact, if a little farther apart, so much the better.

This refers to dwarf trees, which of Apples should *always* be those that are grown upon the English Paradise stock. When ordering young trees, therefore, of this description, it is best to make special mention of this stock. Its merits lie in the influence it has upon the future growth of the trees which are worked upon it: in restraining a too luxurious growth, whilst, on the other hand, being more conducive to the production of wood of a more prolific or fruit-bearing character. It also enables the grower to plant his trees rather closer together with good results, affording room for a greater number of varieties also. Standard Apples are, generally speaking, to be obtained only upon the Crab stock; dwarfs are also worked upon the same, but in both cases a strong growth is the result, with far more room needed between each tree. This stock answers very well for country gardens of large size, and also for orchards, but should never be adopted where the space at command is at all limited in extent.

Pears are obtainable either worked upon the Pear

or the Quince stock; the first-named corresponds with the Crab stock in the case of Apples, and the Quince with that of the Paradise, and should be selected accordingly, as with the Apples.

Plums when grown as standard trees—in which manner the Victoria Plum is an abundant bearer and a tree of good constitution—should be planted at about the same distance as Apples and Pears, or alternately with either of them. Half-standard trees are the best of Plums for this kind of planting, but for walls we prefer dwarf-trained trees, which will soon furnish a good space; the latter may be planted from eight to ten feet apart.

Bush fruit—*i.e.*, Gooseberries and Currants—may be very advantageously planted between the rows of the foregoing, or as margins to open plots of vegetable ground. A little shade is not prejudicial to these, hence they do not occupy so much space in comparison when grown in the former manner. Raspberries always do best when fully exposed to the sun; they prefer a moist soil, and when grown on poor or gravelly soil should have a mulching of manure to protect the roots from drought.

Peaches and Nectarines, also Vines out of doors, must all be grown against walls, south or south-west aspects being the best. On walls facing north, or a tendency to that direction, Morello Cherries do very well, so also do Gooseberries and Red Currants; either of the latter fruits may be grown wherever there is a few feet at disposal, each plant only wanting one foot in width to itself, being trained up with a single stem, and spur-pruned.

The Soil.—The preparation of the soil, previously alluded to only as being all got in readiness before the trees are purchased, needs some few more remarks as to its treatment. In any case where the land is freshly broken up, as with an old pasture, it is necessary to dig the ground two spits deep, breaking it well to pieces as the work proceeds. Should it be land that is retentive of moisture, from either being of a clayey character or laying somewhat low, a few drains would be of service to take off any superfluous amount of water. This precaution need not be taken with light land, where there is a tendency to gravel. If the soil has not been previously impoverished by being robbed of the top spit for other purposes, as alluded to in the notes on the formation of gardens, no manure for the first few seasons will be required, unless it is land that has been cropped heavily, or which of itself is of a poor character. Manure in the first instance is an evil rather than otherwise in the majority of cases; it is far better applied, and with more remunerative results, when the trees are in good bearing condition. On the other hand, should the ground have pre-

viously been occupied with fruit trees, then by all means apply manure in a liberal manner, incorporating it well with the soil. Take note before this is done that no fresh tree is planted exactly where the old ones stood, by making marks of these places in time. When this cannot be very well avoided, then endeavour to change the soil with that at a convenient distance, which has not hitherto sustained vegetable life of a similar character for some considerable time. When the soil is very stiff, or poor and gravelly, the addition of a little good loam at planting-time will be a great assistance in encouraging fresh root action.

The holes to receive the young trees should not be too deep, but of sufficient size to allow the roots to lay out without being in any way crippled. Deep planting is a mistake, and where practised, leaves the roots farther removed from the influence of warmth and of air; from four to six inches is ample for any tree to have its roots covered with soil. The bottom of each hole should be forked up before the tree is placed in it, and some finer soil added if required. When planting trees against walls, some caution is necessary to prevent injury to the bark afterwards as growth proceeds; the young trees should not be placed quite close to the wall, but allowance made for the future increase in the size of the stem. For this purpose three or four inches will suffice between the stem and the wall at the ground-line. The trees against walls should not be permanently nailed or tied for some little time afterwards, merely being secured in a temporary manner, the object being to provide for a sinking of the soil, which will nearly always occur, and leave a strain upon the roots if not guarded against by postponing the permanent fixing.

In every possible case it is a good plan to visit the nursery where the trees are grown; trees can then be selected to specially suit each given case, both in respect to size and variety. It is not a good plan to purchase those which have been previously lifted, and afterwards exposed for sale, probably for a week or two before being sold; the roots in such cases must suffer very materially, and the trees be some considerable time before they recover themselves.

Lists.—The following is a list of well-proven kinds of fruits, and may be taken as a reliable guide when each sort is obtained true to name: mistakes in this respect do at times occur, which, if not found out before the trees attain to any material size, will lead to disappointment. Apples, amongst fruits, occupy nearly the same position, relatively speaking, as Potatoes do amongst vegetables. The following are first-rate cooking kinds and good croppers also, *viz.*—Keswick Codlin, a fine early apple, in use

during August and September; Hawthornden, large and prolific; Stirling Castle, a very fine kind and most constant bearer; Ecklinville Pippin, another good sort of extra size; Cox's Pomona, very reliable, good also for the dessert; Warner's King, very large; Golden Noble, a very handsome apple, and of good constitution; Blenheim Orange, a well-known kind, but not suited to small gardens, as the tree grows strongly. With plenty of room at disposal, and in country orchards, it should by all means be planted, and may be relied upon to bear well when the trees attain to a good size. Dumelow's Seedling or Wellington is one of the best of cooking kinds for winter use; Baldwin is an American apple which is often seen in the fruiterers' shops, being very attractive by its high colour; Alfriston is a good late variety; Annie Elizabeth is one that keeps well into the spring in good condition. Of dessert kinds, we recommend Red Astrakan as one of the very earliest, of good flavour; Kerry Pippin, a small but excellent apple; King of the Pippins, a good kind and great bearer; Cox's Orange Pippin is one of the finest-flavoured varieties grown; Margil, a kind well suited to small gardens; Reinette du Canada, a large and handsome kind, suited either to the dessert or for cooking; Adam's Pearmain, a very handsome apple; Cockle's Pippin is rich in flavour and keeps well; Sturmer Pippin, one of the latest of all; Blenheim Orange is also a good dessert apple; Ribston Pippin, a well-known old kind of high flavour, is disposed to canker: Cox's Orange now takes its place; Northern Spy is another first-rate late kind, tender and juicy.

The following are amongst the best Pears grown, viz.—Jargonelle, very early and a good cropper; Williams' Bonchrétien, a well-known kind; Beurré d'Amanlis, a large and melting pear; Beurré Superfin, one of the finest flavoured; Louise Borne of Jersey, a very handsome and juicy kind; Durandau, large and fine; Doyenné du Comice, splendid flavour; Marie Louise, very juicy and an abundant cropper; Beurré Diel, a fine brown pear (in some seasons it does not ripen well; it should then be used for stewing); Beurré Clairgeau, a hardy kind; Thompson's, a very fine pear of medium size; Passe Colmar, of high flavour and an abundant bearer; Glou Morteau, a very superior kind, lasts good till Christmas; Winter Nelis, one of the best winter pears; Josephine de Malines, first-rate in every way, in good condition through January; Beurré de Rance, a good succession to the last-named; Ne Plus Meuris, one of the last to ripen, of good flavour. For stewing purposes Catillac should be grown; it is the best stewing pear for general uses.

In planting Pears, it is a great mistake to have several trees of one kind: in such cases there is often

much waste. The better way is to have more variety as far as possible; when this is practised, there is a great advantage both in the succession of kinds and in the cropping from year to year. It rarely happens that all kinds fail to give a good return in one year; with a good variety, one sort will bear in all probability a good crop in a season when others fail to a partial extent, and *vice versa*.

The following are a few of the best varieties of Plums, viz.—River's Early Prolific, ripe at the end of July; Duke of Edinburgh, a fine early plum; Orleans, a good cropper of medium size; Greengage, well known for its superior flavour; Victoria, one of the heaviest croppers and of good constitution; Jefferson, a very rich dessert plum; Kirkes, equally good with the last-named, but deep purple instead of golden-yellow; Farleigh Damson, a fine late kind, for preserving or cooking; Coe's Golden Drop, a superior late plum for the dessert. Of Apricots, the best are Large Early and Moor-Park, both good kinds; they should be grown on a south wall. Amongst Cherries the following are a few of the best: Belle d'Orleans and Early River's, both early kinds, the former of a light colour and the latter a black; Bigarreau Napoleon, a great bearer and of large size; Black Tartarian, a very large black cherry of fine flavour; Florence, a later sort; and the Morello, a heavy cropper, valuable for tarts, lasting in good condition till the middle of September. The latter kind may be grown either as a standard or against a wall; in the former manner it needs but little attention at any time of the year. Of Currants, Red Dutch and Raby Castle are two of the best reds; both should be grown: the latter forms a succession to the former; White Dutch is the best white kind, and Lee's Prolific Black the best of that colour. Of Gooseberries the following are some of the best:—Crystal, white; Ironmonger, red; Rumbullion, yellow; Warrington, red; Red Champagne; Snowball; and Leader, yellow.

The following are half a dozen good kinds each of Peaches and Nectarines: of Peaches, Hale's Early, extra early and fine colour; River's Early York, good constitution and free bearer; Dymond, tree hardy, fruit very fine, flavour first-rate (a good peach for small gardens); Grosse Mignonne, another good kind; Goshawk, a large peach of American origin; Sea Eagle, an abundant cropper and the best of late kinds. Of Nectarines, Lord Napier is one of the best as well as the earliest; Elruge is a reliable cropper and of good flavour; Violette Hâtive, a fine large sort; Humboldt, one of the finest-flavoured of all; Dryden, a new kind of much promise; Victoria, the latest kind, of good flavour. In all possible cases Peaches and Nectarines should be purchased in an equal number

of dwarf trees and standards; these should be planted alternately, so as to economise the room at disposal. Amongst Raspberries we recommend Northumberland Fillbasket and Superlative as two of the best reds, and Yellow Antwerp, a pale yellow kind.

The foregoing is a condensed list upon which every reliance may be placed. The vendor should undertake to replace any not true to name. In some soils and localities it will at times happen that a few kinds will not thrive so well as others. When this has been conclusively proved to be the case, the Apples and Pears should be re-grafted with kinds suitable to the locality, or with another sort growing in the same garden, and which it is desirable to increase. With other fruits there will not be so much difficulty in this respect on the whole.

Pruning of Fruit Trees.—This is work which should be commenced as soon as possible in November, before the weather is either too cold or the soil too damp for standing upon; in fact, if it were not for the pressure of other work, we would advise it to be started upon at the end of October. To enter fully into the various modes of pruning would occupy too much valuable space; it is work which may be easily acquired by close observation. Anyone who has not hitherto done any may, by the aid of a few practical hints and by taking notes, soon acquire a fair knowledge of what is needful to be done. In the case of trees, for instance, that are trained against walls, the chief point is to avoid overcrowding of the branches. When these are laid in too thickly, it is impossible for the wood to become well ripened, consequently but a poor crop of fruit is obtained. The promise of a good crop by an abundant amount of bloom in the spring does not ensure it, for where the wood is not well ripened the blossoms are often very weakly or imperfectly developed; hence they do not become properly fertilised. There should always be room allowed for proper leaf development without being in any way crowded.

At this season of the year anyone with a little experience can soon distinguish the fruit-buds (*i.e.*, those which produce the flowers and then the fruit), and tell the difference between these and the wood-buds (*i.e.*, those which only make shoots and leaves). The former are more rounded or conical than the latter, which are more tapering and sharp-pointed. When this work can be accomplished, some of the difficulties of pruning are overcome, and there is not the danger of cutting away the wood to waste. Some thinning out when the fruiting spurs are thick will be necessary: this may be done with confidence, taking away those pieces of growth which are the weakest; at the same time any dead wood should be cut away as closely as possible.

In the case of trees against walls, the leading shoot of each branch should be left of good length as long as there is any room for it, so that the walls may be fully covered. In cutting away superfluous growth upon any trees, one point should be particularly borne in mind: it is that of the strong shoots *versus* the weaker ones; the former should not be pruned so closely as the latter, else the growth of the next season will be even stronger still; but by cutting back closely the weaker wood, it will in most cases gain strength. A clean cut nearly close to the next bud below it should always be made: this will give a more workmanlike appearance, and save the wood from dying back; sloping cuts look very bad, and ought to be avoided. Old trees with a quantity of wood in them will be greatly improved by a careful thinning out, both by removing the weakest of the fruit spurs and by taking away entire branches. Trees that persistently make strong shoots from year to year at the top should have these tied downwards: this will induce them to form fruit-buds, and is chiefly applicable to bush, pyramid, or standard trees.

Young trees that have plenty of room for extension should never be pruned so much as older ones: in fact, they hardly require any pruning beyond thinning out the branches where too thick, and regulating the remaining ones. When young trees commence to grow too strongly, and are not productive of good crops of fruit, the roots should be cut as far down as they can be reached by a spade, and about three feet away from the stem: or if perchance any should be of extra strength, then lift them entirely, even if they have to be re-planted in the same spot again. This kind of treatment in one of its forms will generally have the desired effect the second season afterwards.

In the case of wall trees, after the pruning has been finished the nailing or tying should be seen to. If the trees are secured by nails and shreds, the old ones will need to be examined, replacing the shreds with new ones, and removing any of the rest when the wood has swollen out around them quite tight. With ties the latter precaution is the chief thing to observe; plenty of room for future growth should always be allowed for, and where adopted saves labour in the future. Leather shreds, or those made of canvas and medicated to preserve them from rotting, are the best to use, and far before those cut out of remnants of cloth. For tying material, nothing is better than tarred string: the ordinary tying with raffia is not sufficiently durable: the latter is excellent for temporary use just for a few months, and where no great amount of weight has to be borne.

CAREERS FOR GIRLS.—II.

Artistic Employments.—At the present time there are thousands of women throughout the country who are either earning a living or adding to their income by following one of the many branches now open for musical and artistic employment. Not only as teachers, but as professionals, as exhibitors of pictures, as decorators, book illustrators, wood-carvers, engravers, designers, painters on pottery or porcelain, and producers of artistic objects, painters on silk and cards, and photographers, are women using Art as a means of livelihood. The fact is that if a woman has natural artistic faculty, and can have that faculty cultivated, she generally, either sooner or later, obtains a field for the exercise of her powers, and can support herself by congenial work.

To enter into a full description of the preliminary steps which would have to be taken by girls who proposed to master the technicalities of the different artistic employments would occupy volumes. On this subject the remarks made in the article, "The Future of Our Boys," concerning artistic pursuits, apply also to girls. To succeed in artistic work the first thing a girl has to do is to get art training; and if whatever talent she possesses be cultivated and strengthened by practice, also if she is on the alert to take advantage of any opportunities that may present themselves whilst she is in the midst of artistic surroundings, there is little fear that she will not make her way. The important point is to get first-class training from the beginning. Fortunately, the Schools of Music are open to women as well as to men, while there are hundreds of Art Classes in connection with the Science and Art Department of the Committee of Council on Education. At the majority of these there are classes for females. The following Schools of Art are also available for women:—

The Royal Academy of Arts, Burlington House, London. All instruction in the Academy is gratuitous, but students provide their own materials. Applicants for admission must give proof of proficiency, and must deliver specimens of their work, with a printed form duly filled in, at the Academy, on or before the 28th of June or the 28th of December, to be submitted to the Council. (This form can be obtained from the registrar through the written request of a member, or some artist or person of known respectability.) If approved of, the applicant is received as a probationer for six months, and must prepare within the Academy a further specimen of her powers. Hours, from 9 to 4. Her work will then again be submitted to the Council, and if approved, she will be admitted as a student for

six years, and receive a ticket of admission from the keeper.

Crystal Palace Company's School of Art, Science, and Literature, Board Residentiary House. Annual scholarships.

Royal Female School of Art, Queen Square, Bloomsbury, W.C.

Bedford College Art School for Ladies, 8 and 9, York Place, Baker Street, N.W.

University College, London, close to Gower Street Station. Department of Fine Arts has three terms in the year. Female students are admitted to the Antique and Draped Life Schools. Studios open from 9.30 to 5 p.m. *Slade School*: seven guineas the term, or nineteen for the session. There are scholarships for which women are eligible, and a Fine Art Library is open to them.

The National Art Training School, South Kensington. The annual sessions are five months each, and commence on the 1st of March and 1st of October. Fee, £5 per session, with entrance fee of 10s. Evening classes for females, £1 per session for three evenings in the week. Teachers may attend the day classes for three months on payment of £1 per month, and Classes for Elementary Teachers and Pupil Teachers meet on two evenings in the week; 5s. per session. Further information on personal application at the schools, or by letter, containing stamped envelope for reply, addressed to the Secretary, Science and Art Department, S.W.

King's College, London. Art Classes are held in connection with the Ladies' Department of this college, and students may enter for a general course of training, or for any particular branch of Art study. The usual age for admission is sixteen. Information can be obtained from the Secretary for the Ladies' Department, Miss C. G. Schmitz, 13, Kensington Square, London.

The following are a few of the less obvious directions in which artistic talent may be exercised:—

Decoration.—A large number of women are at the present time making a comfortable living in a pleasant way by devoting themselves to decorative art. Under this general term are included the various devices used in the adornment of the house and person, such as designing wall-papers, carpets, oil-cloths, cretonnes, linoleums, upholstery goods, painting on panels, velvet, silk, and silver wares, and all the details of household furniture, lace, jewellery, and costumes. To succeed in work of this nature a woman must have a good eye for colour, and refined taste, and, most important of all, she must have originality. She must also be able to

draw well. It is astonishing what a demand there is for new designs, and individuals who can produce them, and who have business capacity to help them to dispose of them, can generally achieve independence.

Wood Engraving is always spoken of as an employment for women, and no doubt it is suitable for them: yet not many women are making a living by it. The reason is that to attain proficiency in it requires practice and close attention for many years, and women who want to make money generally want it quickly. Besides, at the present time only skilled workers are in demand as engravers, because those who publish illustrated books and magazines prefer to do their commoner work by photographic "process" instead of engraving. Nevertheless, girls who wish to engage in this work may obtain excellent instruction at the City and Guilds of London Institute.

Photography.—Some time ago a contributor to a London magazine, speaking about women's work, said: "In photography there is room for a large amount of female labour; it is a field exactly suited to even the conventional notions of women's capacity; and, further, it is a field unsurrounded with traditional rules, with apprenticeship, and with vested rights, and it is one in which there is no sexual hostility to their employment."

It is pleasant to know that the opinion thus expressed has proved to be correct, and that at the present time a large number of women are supporting themselves by assisting photographers to touch up and mount photographs, and to do detail work in connection with the delivery of goods. It must, however, be borne in mind that, simple though work of this kind seems to be, it requires great skill, neatness, and nicety, as well as artistic power; and when women attempt it who are not qualified for it, their failure is foredoomed. Also it should be realised that in order to obtain a position, it is usually necessary to have personal influence with some one in the business. A knowledge of the technicalities of the employment can generally be obtained without difficulty when a footing in the business has been secured.

Wood Carving, Plan Tracing, Sun Copying, Chromo-lithography are all regarded as suitable employments for women. They all require special aptitudes, and the prospects in connection with them are very uncertain. For the most part, it may be taken as a fact that teachers of these arts will more easily succeed than workers therein.

Literature.—In literature a firm footing has been obtained by women, and the literary calling is now

followed by crowds of them. Not only as authoresses and novelists, but as magazine writers, critics, and political writers, they contribute on equal terms with men; and it is said that there is not a single journal of any standing or repute which has not one or more women regularly employed upon it.

There is no denying that literature is a very suitable career for women who have good natural gifts, and who have been well educated. Women of capacity have usually the power of observation; they have imagination, the sense of humour, and a telling way of putting things; and all these powers are invaluable in literature. Moreover, they like work which can be pursued quietly, apart from the push and throng of men; and, as a rule, they are more persevering and industrious than men.

Discouragements notwithstanding, the probabilities are that eventually the woman who has the literary faculty, and who desires to write, will make her way in literature. She will, however, make it much more quickly if she goes about it in the right way. With this end in view, she will, perhaps, gain one or two hints by reading the remarks made on Literature in a former chapter on "The Future of our Boys"; they apply equally to both sexes. Also, she will do well to realise that in these days authorship is a matter-of-fact business, and is carried on in a business-like way: it is not merely an outlet for genius. A woman is not likely to succeed as an authoress simply because she wants to make money, and would prefer to do it without putting her head out of doors: she must have something to say that people will like so much to hear, that they will pay for reading it when it is printed; she must have something new to tell, or some valuable information to impart; and if, having this stock-in-trade, she can present it in an attractive form, publishers will be glad to buy of her. They generally are pleased to take what will pay. The reason why they are considered so harsh by would-be authors and authoresses, is that they are teased to purchase what is not in the least likely to be of value.

If, therefore, a woman desires to enter Literature, let her write what she has to write to the best of her ability. When her work is completed, let her send it to a publisher who produces works of the same character as her own. Some publishers, for example, produce novels—it would be of little avail to send them scientific works or poetry; while short stories would be most likely to be accepted by editors who have to bring out light magazines. In any case, let her remember that her productions will be much more likely to receive attention if they are written clearly and distinctly on one side of the paper only, and if the slips are numbered and fastened together. In the first instance the heads of publishing firms

seldom read for themselves manuscripts which are sent to them for approval. They give the MS., as a matter of course, to a subordinate, who pronounces a first judgment upon it, and decides whether or not it is worthy of consideration. This subordinate is human—he likes to be saved trouble; and he will be much more likely to give a favourable report if things are made easy for him, also if the MS. looks bright. Its brightness, however, will depend very much upon its being broken up into paragraphs, and amateurs in authorship do not always think of this. Everything else being equal, it is probable that a MS. which is well broken up has ten times more chance of being fairly judged than is one which runs on without break for several pages.

As the intending authoress will certainly wish to receive her MS. again if it is rejected, she should write her name and full address in large distinct characters on the last sheet. As a further precaution, she might enclose with her copy a stamped and addressed envelope. With a great many people an already-stamped envelope is an article that is never disregarded. There are individuals who would accept the greatest sacrifices from their fellow-mortals, but who would never be beholden to them for a penny stamp. To have discovered the power of a penny stamp is to have discovered one of the secrets of obtaining attention.

When a MS. is considered, the publisher either accepts it or rejects it. If it is accepted, he will either buy the copyright, when the authoress gives up all rights in connection with it, or he makes a proposal of terms, which proposal must be discussed. Frequently publishers offer the author a small sum "down" for a MS., and arrange to give a royalty on sales. If an authoress has means, she may prefer to publish "on commission;" in which case she will pay all the expenses of her own book, receive the profit or endure the loss associated therewith, and pay the publisher a commission for selling it.

Such are the simple business regulations belonging to authorship, acquaintance with which makes the entrance to literature less annoying than would otherwise be the case. Great authors can afford to neglect them, but little authors cannot. A beginner in literature who observed them would be much more likely to be treated with courtesy, than would a beginner who went her own way.

Librarians.—Some time ago a writer in the *Englishwomen's Review* drew attention to the fact that one of the employments which women were admirably qualified by natural capacity and strength to fill was that of assistant librarian. The work is suited to their strength, the hours are ordinarily not

longer than those in public offices, and though the pay is not large, it is as much as in the minor Government clerkships. There is no doubt that to a girl of studious habits a position of this sort would be most congenial. The establishment of free libraries must have caused a large number of such appointments to be thrown open, and there is every reason why they should be given to girls as well as to men. These premises being granted, it is pleasant to find that of late the demand for female librarians has increased, that a good many women are now earning their living in this way, and that many private and subscription libraries employ women.

It is not easy to give information as to how a woman should obtain an appointment of this sort. The only thing to be done is to be on the look-out for vacancies, and to apply for the situation when a vacancy occurs. Advertisements for librarians are usually inserted in the literary journals. There is frequently a disposition in the minds of members of library committees to give positions of the kind to women, and there is no doubt that if it were more customary for women to seek these situations they would get them. In this matter England is far behind the United States, as not only are women chief State librarians in six of the States, but in Boston more than two-thirds of the officials in the public libraries are women.

The Civil Service and Telegraphy employ women. This work is, however, very popular on account of its regularity, the gradual improvement in position associated with it, and the reasonable hours of labour required. Consequently, increasingly large numbers of women enter the examinations, and the competition is exceedingly keen. Vacancies occur by tens, but the girls who try to gain the same are to be counted by hundreds. The principal appointments open are Clerkships, Sorters, Counter-women, and Telegraphists.

A post-office clerkship in London, Edinburgh, or Dublin is one of the best occupations of the kind. The examination is not very difficult; it comprises Arithmetic, Spelling, Composition, Geography, and English History, these being subjects which will have formed the groundwork of a good general education. The salary commences at £65, and rises by £3 per annum to £80, with a prospect (very slight, however) of possible promotion by merit to £300. The hours are from 10 to 4, and the work is not heavy; but it is understood that the Government are proposing to demand ere long an additional hour per day. This is greatly to be regretted, as the female constitution is not so well adapted for long hours, and the work requires close application and attention. The limits of age are 18 and 20.

Sorterships.—No candidate will be eligible for these appointments who fails to satisfy the authorities of the Post Office that she is not less than 4 feet 10 inches in height without boots. Like female clerks, female sorters are required to resign their appointments on marriage. The limits of age are 15 and 18, and the hours of attendance are shorter than mostly fall to the lot of young girls who have to earn their livelihood, while the duties are lighter. The commencing salary is 12s. per week, rising by 1s. per week to 20s., with a good prospect of further promotion to higher classes for the most meritorious.

Counter-women.—These appointments are filled up by selection from the general staff of Telegraphists; so that in order to obtain a counter-womanship it is necessary to enter as a Telegraph Learner. The salaries attached to these appointments vary in the different offices. The duties consist of selling stamps, attending to money-order business, &c.

Telegraphists.—These appointments also are obtained by open competitive examination. The limits of age are 14 and 18. Those who are successful in the examination do not at once enter upon their regular employment. The regulations provide that successful candidates shall attend a Post Office Telegraph School, to undergo a course of instruction in Telegraphy. For this instruction no charge is made, but learners do not receive any pay while at the school. After three months' instruction, learners who display aptitude for the work obtain a certificate, and begin to receive payment. The scale of pay is 10s. a week at the commencement, rising to 12s. and 14s., afterwards increasing by 1s. per week to 17s. per week; thence by 1s. 6d. per week to 27s. By an arrangement which came into force quite recently, the highest pay given to first-class girls employed on the telegraph staff was raised to 38s. per week, while the pay of second-class girls was raised to 30s. In addition, the pay for overtime is now a little more than it used to be, and telegraphists receive the whole of their pay when absent on sick leave.

Information concerning these appointments, with copies of the papers which have been set in the competitive examinations, may be obtained from a work entitled "Guide to Female Employment in Government Offices," published by Messrs. Cassell and Co., price 1s. It is an interesting fact that according to the latest returns of women clerks in the Civil Service of the metropolis, there are amongst them three superintendents with salaries of £215, rising to £400; four assistant-superintendents at £200;

nineteen principal clerks, with salaries of £120, rising to £170; eighty-seven first-class clerks at £85, rising to £110; and 562 second-class clerks at £65, rising to £80.

The telephone furnishes employment for women under conditions similar to those which exist in connection with Post Office and Telegraphic appointments; but the remuneration is not so high. Telephonic clerks are under the care of a lady superintendent. The applications are numerous, and the preference is given to daughters of professional men.

Clerks and Book-keepers.—The appointment of women as clerks and book-keepers is decidedly on the increase. Many large firms now employ women instead of men, and the fashion seems to be spreading.

Of course, it is indispensable that a woman who intends to earn her living in this field should write clearly and distinctly, should spell correctly, and should have a good knowledge of arithmetic. A duly-qualified woman who can give good references of efficiency seldom wants a situation very long; although girls often find it difficult to get a first appointment. There are several classes for the instruction of women in book-keeping in different parts of London. In connection with the Society for Promoting the Employment of Women there is a class held at the offices of the Society, 22, Berners Street, Oxford Street, which has always been taught by a lady who has a practical knowledge of book-keeping. Here arithmetic forms an essential part of the instruction given, and the knowledge of arithmetic as much as that of book-keeping is tested by examination held at the end of each course of lessons. This class meets twice a week, in the evenings; the fee is sixpence weekly, and the course lasts about four months. Candidates wishing to join the class must be over sixteen years of age, and must have received a good education. Only those whose conduct and industry while attending the class have satisfied the teacher are allowed to go up for examination. All who gain over 75 per cent. of the marks attainable receive a certificate, and the possession of this guarantee of capacity is an advantage to those who seek situations.

Besides the class already mentioned, book-keeping classes are held at the Technical Training School for Ladies, 1a, Victoria Square, S.W. (application to be made to Miss Forsyth); at the College for Men and Women, 29, Queen Square, Bloomsbury, W.C.; at the College for Working Women, 7, Fitzroy Street; at the Birkbeck Institution, Bream's Buildings, Chancery Lane, and Fetter Lane; and at the Civil Service Classes, North London Collegiate School, 202, Camden Road.

Type Writers.—Type writing is an employment well suited for women, and large numbers of them are engaged upon it. The openings are fairly good. Women type writers are constantly employed as copying clerks and secretaries in merchants' offices; lecturers, preachers, actors, doctors, and even printers, frequently prefer to use type rather than manuscript, and the Royal Commission on Civil Service Establishments recently recommended the employment of ladies in public departments under proper arrangements, and made special mention of their work as type writers. As a result of this recommendation, women type writers are now engaged in the Inland Revenue, the War Office, the Customs, the Foreign Office, and the Treasury Departments. In a large number of metropolitan and provincial offices the type writer is used, and women are almost exclusively chosen to work it, as they are found to be peculiarly adapted for the task.

There are at the present time a large number of type writing offices both in London and in several provincial towns. These offices are carried on entirely by women. They execute with promptitude and efficiency a large amount of varied work. In many cases the head of the office or the *employés* are thorough French, German, and Latin scholars; and this is a great advantage, as it enables the type writers to undertake foreign work.

The necessity of a good education and of sound common-sense for type writers is evident when it is remembered that MS. is too often illegibly written, and that words are omitted, which the individual who copies the MS. must supply. Unless, however, she has a good general knowledge, and is acquainted with history and with scientific terms, she cannot possibly do her work satisfactorily.

The best thing that a woman can do who wishes to become a type writer is to serve an apprenticeship in a copying office. The fees for training vary from £2 2s. to £5 5s., and pupils remain from six weeks to three months. Experts often manage to write from fifty to seventy words a minute, but only practice enables a woman to write as fast as this.

The consequence of the recognition of the advantages of type writing has been that typing is now somewhat over-crowded, and that imperfectly educated women undertake it. Competition being fierce, low rates of pay too often prevail. Fortunately, efforts are being made to prevent this deterioration of the trade. A number of experts in type writing have formed a trades union of employers, called the Society of Typists, and a union for clerks, called the Type Writers' Operators' Union. These societies have together fixed a minimum rate of charges, and on their schedule of prices the rate of pay to clerks has been based. They have also established examina-

tions, preliminary and advanced, and arranged to give certificates to candidates who prove efficient. The possession of the certificate is an advantage to women seeking employment, and the fact that it is to be obtained is a check on imperfect work.

Shorthand Writers.—Shorthand as a profession for women is steadily growing in public favour, and many women are now holding positions where acquaintance with it is a decided advantage. It is particularly valuable both to typists and clerks, and women who are skilful shorthand writers are also employed as reporters of public meetings. There are many openings of employment for women, and the market price of service is at once raised when it is known that the individual is mistress of this art. It would therefore be well if Shorthand could be included in the list of subjects taught in girls' schools and colleges. Fortunately, it is taught in several educational establishments; and stenographic schools, where women can obtain tuition, are open in the metropolis. One of the best known of these is the Metropolitan School of Shorthand, 27, Chancery Lane. Here classes are held from ten in the morning to nine at night, so that they are available for those who have only partial leisure.

The work of preparing women for business life is also done very successfully and cheaply by the Young Women's Christian Association. This society has branches throughout Great Britain, with centres where classes are held, and in many of these the subjects taught include book-keeping, type writing, shorthand, dressmaking, &c. For a list of localities where classes are held, apply to the Central Office, 16a, Old Cavendish Street, W.

Needlework is quite a typical woman's trade, and there is no doubt that crowds of women follow it, for in the census of 1881 the number of needlewomen returned for Great Britain was 640,000, and since that time the numbers are believed to have largely increased. Yet it is very badly paid, and there is no doubt that the vast majority of these workers are struggling with misery and want. Consequently, needlework as such is not to be recommended as an employment for women. When special skill with the needle exists, so that the industry can be elevated to the position of an art, money may be made by it unquestionably, and fancy prices are frequently given for specimens of church embroidery, tapestry, and decorative work of various kinds. Also it is a fact that first-class work, even when that work is of the ordinary sort, is fairly remunerative. For the most part, however, needlewomen work for starvation pay.

As an occupation for women of leisure, Needlework

occupies a high position, and the standard of excellence has been raised because a number of ladies of position and influence have devoted special attention to it, and have done what they could to spread the knowledge of it. In connection with the Royal School of Art Needlework, South Kensington, gentlewomen are taught to sew daintily; and when they have become skilful, facilities for disposing of their work are put within their reach. The establishment of institutions for the Advancement of Plain Needlework, such as the London Institute, 36, Balcombe Street, Dorset Square; the Decorative Needlework Society, 17, Sloane Street, S.W.; the Ladies' Association for Improvement in Plain Needlework, Wolverhampton; and the Royal Irish School of Art Needlework, Clare Street, Dublin, also show that the interest taken in the subject of plain needlework is increasing. In connection with these schools, lectures are given, classes are held, and at stated intervals the work of the pupils is submitted to a competent examiner, and those who pass the examination successfully receive a certificate or diploma. Certificated needlewomen generally aim at obtaining positions as teachers of needlework.

It ought to be generally known amongst women that a chief reason why needlework is so badly paid is that the competition for employment is not only keen, but to a large extent it is unfair. Young ladies and women possessing a moderate income, who do not need to work for a living, are glad to work for employment and "do needlework" by way of adding to their resources, and providing themselves with pocket-money. They have no rent to pay, and they do not need to buy food; they simply "fill their leisure usefully"; and if they make a small sum for a large piece of work, the small sum is acceptable, and they feel that it is so much to the good. Meantime the employer, having obtained labour at a low rate, does not care to pay a higher rate to workers less favourably situated, and thus the price of needlework goes down in the market. Women ought to remember that while they have a perfect right to "turn an honest penny" by giving honest work for honest pay, they have no right to lower the market for others. The woman who undertakes to do needlework for less than the market price is helping herself with one hand, and injuring some one else with the other.

It is a hopeful sign of the times that in order to "help poor women who live by hand-work to help themselves, and to be helped by other women who would otherwise be as poor as themselves to do good work, and obtain the market value of good work by every means, including combination," a society is established, entitled the Women's Trades' Union Provident League. This league endeavours

to maintain a Free Labour Registry Office, at which women may learn where to get work and its market value. Ever since it was started, Miss Florence Nightingale and many other enlightened friends of women have sympathised with its methods of work. Women who wish to join the league may obtain information concerning it by applying to the Secretary, Industrial Hall, Clark's Buildings, Broad Street, Bloomsbury.

The rage for cheap goods is also a reason why needlewomen are so badly paid. In order to counteract this evil, there are in existence one or two co-operative needlewomen's societies, whose members are not employers of labour, but associations of needlewomen who desire to come into immediate relation with those who require their labour. These societies were established in the faith that there are many persons who would be willing, if opportunity offered, to place the needlework they require directly in the hands of the worker, rather than let it find its way there by long and ruinous circuit. It is not pretended that work can be done more cheaply by these societies than by others. There are, alas! thousands of women who are in miserable case enough to be forced to work at any wage. All that is promised is that the work shall be of the best, and the price fair. A statement in detail of the price of an article may always be had on application. All payments are strictly cash. It is hard to those not conversant with the details of a business of this sort to realise the actual suffering caused by delayed payments. Work can only be undertaken on the distinct engagement that it shall be paid for on delivery, or, at the outermost, within a month of delivery. Information concerning prices, &c., charged by one of these societies can be obtained from the Manager, 34, Brooke Street, Holborn, London.

Dressmaking and Millinery.—There are thousands of women engaged in Great Britain in these branches of the profession of Needlework; and that the employment is lucrative is evident from the fact that women of position have taken up the work, and that the owners of establishments for making fashionable dresses, cloaks, hats, and bonnets make good fortunes. It is probable, however, that for every one who makes a competency in this direction there are a score who find it difficult to make a comfortable living. The women who succeed in dressmaking, millinery, and all needlework are usually the women who employ others; and their success is due to their business capacity and administrative ability, rather than to their skill in work.

In order to become either a *first-class* milliner or

dressmaker, a woman must serve a two or three years' apprenticeship with some one actively engaged in good business. For the instruction thus obtained a premium generally has to be paid, the amount varying from £30 to £80. At the end of her apprenticeship the worker gains employment, works for a salary, and practises what she has learnt. After a time she will probably obtain an engagement, and, if clever and capable, will find regular employment. A very great difficulty in connection with learning dressmaking, is that in these days work is divided into departments. One woman will make the skirt, another will "drape," another will fit the bodices, another will make the sleeves, and so on. This makes it not easy for a woman to gain a knowledge of the business as a whole; yet if her purpose is to "set up on her own account," she must understand every branch of her employment. The only thing a woman can do is to pick up what knowledge she can, and to make the most of the opportunities which fall in her way. There is always a demand for good dressmakers and milliners, and women with industry, good taste, punctual habits, and sound business capacity, may find in work of this sort abundant scope for their energies.

Button-hole Makers.—Curiously enough, button-hole making, which is really a department of dressmaking and tailoring, has become a business by itself, and it is comparatively well paid.

Printing.—The following information concerning women printers is compiled from the Report of the Society for Promoting the Employment of Women, the offices of which are at 22, Berners Street, Oxford Street:—"The demand for women as compositors is greater than the supply. Printing—or, rather, the setting up of type—is a trade in which women have proved their thorough efficiency. The work in itself is quite suitable to women. They can either sit or stand at the cases, the hours are moderate, and no great amount of physical strength is required, while the earnings are very fair, and the slack season comparatively short.

"The apprenticeship is from three to four years, but a girl can begin to learn printing at fourteen years of age if she has passed the sixth or seventh standard at an elementary school. The premium is very small—£5—and wages are earned after a few months. There are several firms by whom women are received as apprentices and trained as compositors, Messrs. Bale, of Great Titchfield Street, being the oldest. A Woman's Printing Office has also been lately opened by the Misses Hill at 154, Westminster Bridge Road. Miss Emily Faithfull was the first to introduce printing as an employment for

women, and after doing some work which had given Her Majesty great satisfaction, she was appointed Printer and Publisher in Ordinary to the Queen."

It is quite expected by the committee of the society already named that when the next census is taken, it will be found that there is a greater increase in the number of female compositors than perhaps in any other industry. Of course, women printers can only get work in certain offices and in very few provincial towns.

The number of women who are employed as *Printers' Readers* is said to be steadily on the increase, and it has been found that women are very well adapted to the work, because they are so patient in deciphering illegible MSS. To qualify a girl for a post of this kind, she must not only have had a good education, but she must be practically acquainted with the technicalities of proof-reading. This knowledge she may gain in the first instance by acting as reading-girl or copyholder to a proof-reader. Printers are frequently quite willing to employ intelligent quick girls in this occupation, and they pay a trifling salary from the commencement of the engagement. After serving twelve months in this capacity, a well-educated girl is likely to be quite equal to undertake the work of reader, which is very interesting and fairly well paid. The remuneration rises as the reader becomes more efficient.

Horticulture.—Individuals who have studied the subject of women's work have become thoroughly convinced that there is a most lucrative field of labour accessible to them in Horticulture. It is pleasant to know that not only is this field accessible to women, but that it is already very extensively occupied and worked by them. At the present time there are large numbers of women, not perhaps supporting themselves, but adding to their income by cultivating fruits, flowers, and vegetables, and selling the produce of their labour, or by keeping bees or poultry, and sending the honey and the eggs to market. Industry in this direction is very interesting and perfectly legitimate. It injures no one; it simply supplies the needs of the community with superior fresh home goods, whereas they would otherwise be supplied by inferior and stale foreign articles, and it furnishes a great incentive to thrift.

To pursue an industry of this sort knowledge is necessary, and common-sense is also required. The knowledge can generally be obtained from books and by practice. The common-sense is not so easily procured, but it grows with feeling after it, and there are scores of women who are acknowledged to be plentifully endowed with it, who yet never showed any signs of having it until they resolved to help themselves. For a woman who has health, strength,

and time on her hands, to sit down to endure poverty, when she has a piece of ground in which she might keep poultry or bees, or a garden in which she could raise vegetables, fruit, or flowers, is a mistake; and it is especially a mistake when the women referred to have the advantage of living in the country. Of course the difficulty in connection with industries of this description is that every worker therein has to find her own market and make her own way. Thousands of women have, however, already overcome this difficulty, numbers are learning to overcome it every year, and it is earnestly to be hoped that to these numbers large additions will be made.

Domestic Service.—It would be absurd to leave domestic service out of the list of careers for women, seeing that at the present time there are more than 1,230,000 women employed as domestic servants, and that still the want of good domestic servants is one of the most urgent wants of the age. The fact is, however, that with regard to domestic labour we are passing through a period of transition. When we have learnt the lesson that has been set before us we shall probably be much more comfortable than we are now, and a great many women will be happily busy who are now idle. We have to disabuse our minds of two ideas: one, that domestic skill can be acquired without training; the other, that household work is degrading. If we realised the necessity for training, we should have girls taught to manage a house wisely and well, and to keep accounts as part of their education; if we thought domestic work honourable, we should treat domestic servants reasonably, and respect their rights while exacting our own; and we should let our own daughters take part in domestic work, not only in their own homes, but as a remunerative employment. We have not learned these lessons yet, but that we shall be compelled to learn them there is very little doubt.

The Colonies.—There are so many dangers lying in wait for women who leave home and their accustomed surroundings, and who venture into unknown lands, that there is no wonder that individuals who have the welfare of women at heart hesitate very much before they dare to recommend emigration as affording an opening for them. Nevertheless, it is a fact that if proper precautions are adopted, if the women who go out are of the right sort, healthy, capable, and energetic, and ready to give up luxury and ease in order to attain independence and usefulness: if, moreover, they have a little money which will keep them after their arrival at their destination until they can get employment, and if they can make arrangements to be received by persons of respectability who will befriend them,

emigration may be for these women a great boon, and it will bring to many a woman comfort, happiness, and usefulness, who, apart from it, would be miserable and wretched, feeling herself and her life of no value.

Women are continually being told in these days that here the population is made up of more women than men. Yet there are places where there are more men than women, and in these countries strong, industrious, respectable women are eagerly welcomed. Friends and guardians who have the charge of orphans or of friendless girls could scarcely do a kinder thing than send them judiciously to one of these countries.

The women who are most wanted in the Colonies are educated domestic women, who would be willing to do all sorts of work in a house, but whose connections would not approve of their taking situations in England. For women of this class, who go out with the intention of doing their duty, and living moral sober lives, there is abundant work and good pay waiting in the Colonies. Some years ago the need for women was so great, that the various Governments gave free passage to persons of good character and free from infectious disease. Now, however, the Queensland Government is the only Colonial Government which grants free passages to single women; although suitable women are wanted also in several of our Colonies.

The best thing a woman can do who desires to emigrate is to apply for advice, protection, and (if possible) for introductions to one of the societies which have been established for the purpose of promoting the emigration of women to the Colonies. The officials of these societies, having had experience in work of this kind for many years, are generally able to say at once whether or not a woman or girl would be likely to succeed abroad, and also would be able to give information up to date of the conditions and prospects of emigration. Prospects alter so rapidly that it is not safe to trust to any advice but that which is founded on most recent knowledge. Application should be made in the first instance by letter, stating full particulars, and a stamped and addressed envelope should be enclosed for reply.

The following societies are of good standing and position:—

Colonial Emigration Society, 114, Victoria Street, Westminster. Hon. Sec., Mrs. Blanchard.

Female Middle-Class Emigration Society. Sec., Miss Blake, 7, Roland Mansions, South Kensington, S.W.

United Britishwomen's Emigration Association.—Secretary, Miss Lefroy, 17, Eldon Road, Kensington.

The following information concerning the kind of

women wanted in the Colonies has been obtained from Mrs. Caroline Blanchard, the hon. sec. of the Colonial Emigration Society, a lady who has for many years occupied herself in advising and aiding women who wish to emigrate. It may be added that the society with which this lady is connected has established a Loan Fund for the purpose of assisting educated women who cannot pay their passage, or who are not eligible for the Government free passage, but who are able to give good security:—

“The kind of women, other than domestic servants, likely to find employment, may be divided into four classes:—

(1) Highly-educated governesses; (2) nursery governesses and useful helps; (3) trained nurses; (4) young women in business.

“For Class 1 there is only a limited demand. Salaries do not range higher than in England; in Government high schools from £100 to £300, without board and lodgings; in private schools from £100 to £300, without board and lodgings; in private schools and families from £40 to £100, with board and lodgings. Qualifications must be quite as high. Ladies going out must be prepared to wait some time before finding a situation. On the whole, life is much the same as in England, especially in towns. In the country there is a good deal of riding and driving, and pleasant freedom of intercourse. The governess is treated more as a member of the family than in England, and certainly has more social enjoyment.

“(2) *Nursery Governesses and Useful Helps in the Family.*—For these there is a much greater demand. Salaries vary from £30 to £40. Other advantages may also be cited, such as a bright and healthy climate; in the country, riding and driving; and, as before stated, the position is better than in England, the young lady sharing the family life in a much greater degree than here. It is the custom in the Colonies for the governess to take her meals with the family, and usually to spend the evening in their company. She is treated more as an elder daughter than as a paid teacher. Family life in the Australian country is much simpler than in England, and the governess's life a brighter and happier one. If, however, the advantages are greater, the duties are correspondingly increased. Owing to the scarcity of servants, and the high rate of wages, the ladies of the house do a good deal of the lighter work themselves. The governess would probably be required to make her own bed, dust her own room, bath and dress the children; when the household was short-handed, probably lay and clear away breakfast, wash up the breakfast things, “give a hand” with the day's work, making pastry, cakes, or puddings, and assist the lady of the house. In the ordinary course there would be children, probably boys as well as girls, to the age of twelve, to teach, their clothes to mend, often to make, and the other usual duties of a nursery governess's life. Her qualifications must be “good all round.” Besides being able to teach Elementary English, French, music, and generally Latin, as Colonial boys in the country are seldom sent to school till twelve years of age, she ought to be able to cut out and make children's clothes, understand cookery, and make herself generally useful.

“(3) *Trained Nurses.*—For these there are good openings—matronships of country hospitals and private nursing. A trained nurse can easily make from £60 to £100 a year. In some of the large towns there are homes where the nurses are paid £50 a year, and are sent out to private cases, returning to the Home when out of work. In all cases full certificates are required.

“(4) *Young Women in Business.*—For qualified shop-assistants there is a good opening in the large towns, but they must be competent to take their place as heads of departments. A salary of £40 to £100, without board and lodging, can be obtained by those who have good characters from first-class English shops. Competent dressmakers can easily make a good living. Young women of every class must be prepared to wait for some time before finding suitable openings. It is therefore necessary for them to take in no case less than £5, so as to enable them to wait while seeking employment. Lodgings are dearer in the Colonies than in England, except in the case of a few young women's Homes.

“Clothing is no dearer than in England, and large outfits are not recommended, as it is better to purchase in the Colony things suitable for the climate.”

Trades.—The number of trades followed by women is so great that it is only possible to refer to them generally. To quote the words of a writer in the *Englishwoman's Year Book*:—“We have a nation of working women among us, and the number of women following some specific calling in the three kingdoms nearly equalled, at the last census, the entire population of Scotland and Wales put together. Putting aside the professional women, who, as teachers, nurses, clerks, &c., amount to about 300,000, and those employed in domestic service (about two millions), there are still two millions of women who work as industrials in factories and mills; and the total number of women who are earning their bread, exclusive of the many wives who help their husbands in their various callings, numbered at the last census over four and a half millions.”

The most noticeable condition belonging to these industrial workers is that for the most part they are very badly paid. The skilled workers, it is true, are fairly well paid, but the majority of industrial women are unskilled, and though they work with all their power, they live on the brink of starvation. They are employed instead of men because their necessities compel them to accept lower wages than men, and the consequence is that the industry of the women serves to keep down the wages of the men. The misery of this state of things will never be altered until men and women unite together for their mutual good.

The whole subject of female industrial labour is surrounded with difficulties, and it presents problems the solution of which may puzzle the wisest amongst us. But this is not the place to discuss social questions. There is, however, a practical lesson which parents who have to choose a career for their girls would do well to act upon. It is, that girls should be trained to work, and while still young should be put into a position where they can become skilful. There is no better way of helping women than to put them in a position where they can help themselves. As a writer in the *Englishwomen's Review* has ably said:—

"Hard work, if carried on under respectable conditions, and with sufficient remuneration, is no evil to the women and young girls of England, the future mothers of the English nation; but if their wages be reduced to a pittance on which it is difficult to support life, if they are compelled by competition from outside and by want of organisation amongst themselves to work for starvation wages,

terrible mischief must ensue, under which not only they, but the entire community, will ultimately succumb. We ought, therefore, to insist that in every scheme for technical teaching girls shall have their share; and we ought, by assisting benefit societies and unions among the women workers themselves, to encourage them to keep up a high standard of work."

PAPER-HANGING, WHITEWASHING, AND STENCILLING.

GIVEN the power of working neatly, a good supply of patience, and the necessary materials, the task of papering a room is by no means an arduous one, but it is a good plan for an amateur to begin with small cupboards, back lobbies, and out-of-the-way nooks, till a little practice has been gained in getting the paper perfectly smooth. For in this is to be found the chief difficulty.

Stripping.—Before papering, the first thing to be done is to strip the old covering off the walls. Get a pail of hot water and a large brush, and thoroughly saturate the walls. A careless workman must beware of using the water so plentifully that it ruins the ceiling in the room beneath. It is better to treat one side at a time, rather than to wet all the walls at once. If the latter is done, the sides last wetted will have time to get dry while the first are being stripped, and the soaking business will have to be done all over again. A professional paper-hanger uses a specially-contrived implement for clearing the paper off the walls, which is something like a carpet-stretcher on a large scale: but the amateur will be able to manage perfectly well without this, if he begins at the top of the wall, and there raises the edges of the paper. If the saturation has been thoroughly done, the lines of paper will allow themselves to be peeled off without any difficulty. A piece of slate is a handy impromptu tool when any scraping is needed. It should be kept wet while in use, and the paper constantly moistened between the wrong side and the wall as it is pulled off.

The first walls that are stripped should be allowed to get perfectly dry while the rest of the room is being done, so that they will be ready to be sized when the last of the paper has been removed. The size must then be made ready. It is mixed usually in the proportion of a pound to a gallon of water, and should be applied with a large whitewash-brush.

Papering.—When this is done, and while it is drying, the paper must be prepared. It is cut

first into strips the height of the room; but before cutting it, the worker must be careful to get the pattern to match exactly at the sides. Thus, the first strip may be cut according to the height of the room; in fitting in the second one, the roll of paper will probably have to have a piece cut out of it, to make the design run on exactly where it joins the first strip. In purchasing paper for a room, due allowance must always be made for this cutting-out: and, indeed, the better the paper the more will have to be removed, as the pattern is repeated less frequently than in a common quality. The white edges which run down the sides of most papers are also cut off.

The paste should be made of a quartern of flour (for a good-sized room) boiled in water in the usual way, and mixed with four ounces of alum. It is as well to strain the paste before it is used, in order that there may be no lumps to interfere with the set of the paper. Lay the strip face downwards on a long, narrow, wooden table; paste it over very evenly and on the wrong side with a brush (such as that in Fig. 1); then give the strip a fold or two at the bottom with the pasted side inwards. Leave the paper for a few minutes to swell, then take the strip by the two upper corners (is it necessary to remind the amateur to see that he is not holding it with the pattern upside down?), and fasten the edge of it just below the cornice of the ceiling. Dab the paper gently from the middle of the strip towards the edges, so that no creases or

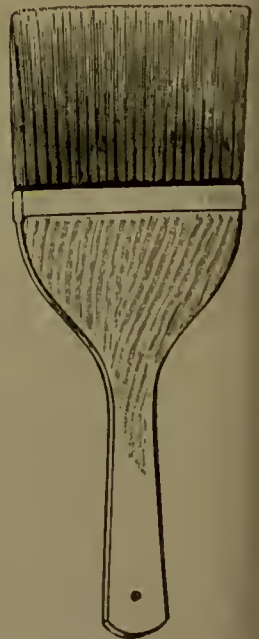


Fig. 1.—PASTE BRUSH.

bubbles remain. Work gradually downwards, unfolding the strip as required, and smoothing it carefully. The workman must see that he does not rub it so hard as to disturb the surface of the paper. For delicate papers, such as those with an enamelled

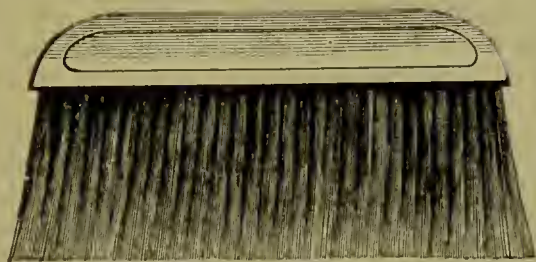


Fig. 2.—PAPER-HANGER'S BRUSH.

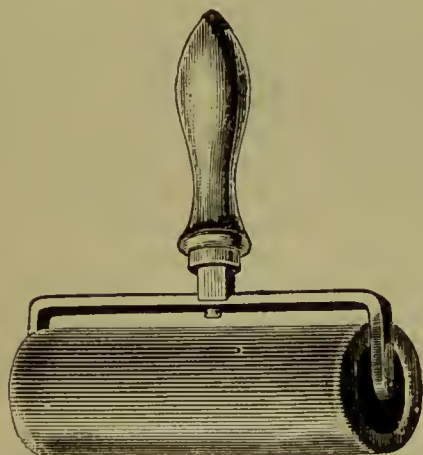


Fig. 3.—ROLLER.

or silk finish, a roller (Fig. 3) is better than the brush (Fig. 2) that is used for more ordinary work. For such a thick material as Linerustra, or leather paper, it is advisable to mix glue with the paste with which it is fastened up.

A special make of varnish is sold for wall-paper, which is clear and nearly colourless. It is only required, however, in positions such as staircases and passages, in which the walls are subject to a great deal of wear and tear, and the amateur will save himself a considerable amount of labour if he invests in a paper that is ready varnished before it is hung. Some objections may be raised to such papers on the score of their being varnished with spirit-varnish instead of the more durable kind which is used after the paper is in place. It will be found, however, that with any ordinary care it will wear long enough; and the fact that a new length of a few yards may be added at any time over a discoloured or dilapidated part, without the trouble of varnishing it again, is a great advantage.

Mending Wall-paper.—While on the subject of paper-hanging, it may not be amiss to give a few hints respecting the right and the wrong way of mending a worn place in the paper of a room which is, for the most part, in good condition. An inexperienced worker will probably take the scissors, cut a square or round piece of the new paper, and paste it over the torn place, with the result that so patent is the join, that it might as well have the word "patch" written against it for every one entering the room to read. Now, if the patch is scarcely larger than the shabby portion of the original paper, and is cut according to the *outlines of the pattern*, which must, of course, correspond exactly with those which it is to cover, it will be as nearly invisible as it is possible to make it. No straight lines at all should be allowed along the sides of the patch, unless it happens that the paper itself is a tile or mosaic pattern, in which straight lines form part of the design itself. No patch of paper should be laid over a hole in the wall where a nail has been, until this hole is well filled up, as, after a time, the paper is likely to sink, and make an unsightly hollow in the wall. A tiny piece of putty, kneaded between the hands, will best fill the hole made by a nail. It should be pressed down till it is quite even with the face of the wall. Soft paper soaked in water till it is quite pulpy, then mixed with a little flour-paste, answers well for filling up holes in papered walls when putty is not at hand; indeed, almost any soft material will answer the purpose, even a tiny piece of yellow soap well moistened with water.

Repairs in Plaster.—All walls that are to be either re-papered or distempered should have the nail-holes, or any dilapidations that may have been caused by the door handles and keys becoming pushed into them when the door is wide open, carefully "stopped" before the new paper or colour is applied. The ordinary stopping used for this purpose is composed of a mixture of slaked lime and plaster-of-Paris. This is used in the proportion of three parts of lime to one of plaster; if too firm, it can be easily thinned down with water. The slaked lime should be about of the same consistency as ordinary putty; it should be placed on a board, and the plaster-of-Paris worked into it gradually with a trowel. No more should be mixed than is likely to be used up at once, as the compound soon hardens. A very good substitute for a plasterer's board may be made of a wooden box, such as grocers keep packets of cocoa, sweets, and spices in. Take off the lid, and remove either the front or the back. By leaving three sides, the putty is kept within bounds, all the mixing and preparing being done

at the open front of the box. The trowel should have straight edges, and a good-sized whitewash

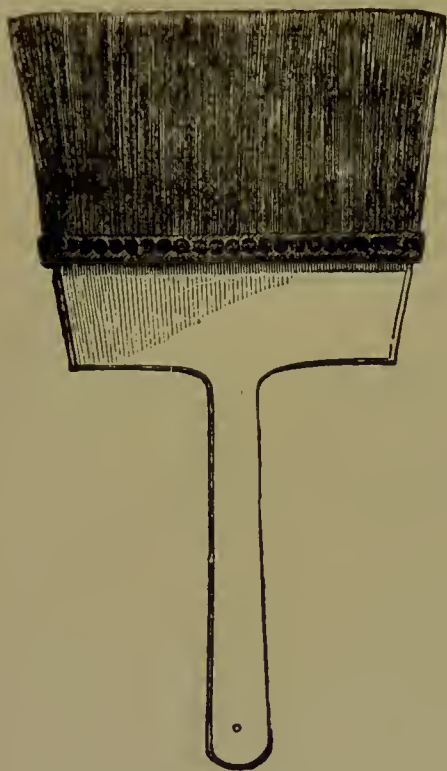


Fig. 4.—WASHING-DOWN BRUSH.

or washing-down brush, such as that in Fig. 4, should be procured. Get a pail of clean water, and with the brush carefully wash down those portions of the wall which need repairing. Soak them well with water, then take some of the plaster up with the trowel; push it well into the worn places, working it in thoroughly; finally, scrape off any superfluous paste, and smooth the surface thoroughly with the "flat" of the trowel.

Another mixture often recommended for patching walls is plaster-of-Paris and fine white sand, mixed into a paste with water. Any imperfections that are cracks rather than holes, and which are too small to take the plaster easily, should be slightly enlarged by paring down the edges with a knife, till they offer a better field for the laying in of the plaster. One point to be specially attended to is that the worn place should be thoroughly saturated with water before the new plaster is laid on; otherwise, the two materials will dry unevenly, and the patch will after a time be very likely to fall out.

Distempering and Whitewashing.—If any member of a household is skilful enough to occupy himself occasionally with small jobs of whitewashing

or distemper, he will find that he is able to keep his house tidy at a very small expense, and with far less general upset than when he is obliged to call in the assistance of strangers. It is, however, only after some considerable amount of practice upon upright surfaces, such as walls, that experience enough can be gained to whitewash a ceiling. The first thing to be done is to stop all holes and irregularities as above described, and the plaster patches must then be allowed to become quite dry. The surface is brushed down, to get rid of all dust and grit, before sizing. About a pound of the glue will be needed for a gallon of water. The mixture must be melted down slowly: indeed, it is better to stand it in a large vessel of water than to melt it by placing its own pan on the fire; while in use too, it should be kept standing in a jar of hot water. The two most ordinary shapes of brushes for whitewashing and distempering are shown in Figs. 5 and 6. That in Fig. 5 is known as a two-knot brush; that in Fig. 6 is broad, with three knots. The worker must be prepared to pay as much as six or seven shillings for such brushes; it is no economy to buy cheap ones, as they soon wear out and become useless; a good one does far more work, and, if taken care of, keeps useful to the end. Before using, a new brush should always be soaked for some hours in clean water. This causes the bristles to swell, and, in consequence, they are not so likely to fall out.

For colouring the walls of a good-sized room,



Fig. 5.—TWO-KNOT BRUSH.

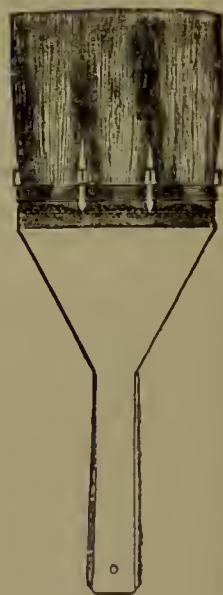


Fig. 6.—THREE-KNOT BRUSH.

about twelve pounds of whiting will probably be needed; put it in a tub, and fill it up with clean

water. Leave it to stand for twenty-four hours, then pour the water off. The oftener this is repeated, the whiter will be the wash; but once is sufficient if colour is to be added. Take powder colour the tint required, put it into a bowl, and mix it into a paste with water, being very careful to rub down all the lumps; add more water, and stir it gradually into the whitening. It must be thoroughly mixed, or it will set in a series of streaks. The colour generally dries lighter than it appears when first mixed, so due allowance must be made for this in the amount of powder used. Now add the heated size, using about a pound of size to twelve pounds of whitening; mix it thoroughly. There is great art in knowing when the correct proportions of the material have been obtained. If it is very sticky, there is too much size; if not at all sticky, there is not enough. The mixture must now be left till cool, when it should be almost like a jelly. Apply it with a two-knot brush, like that in Fig. 5. Work downwards, with care that no ridges are left where each brushful of colour is joined on to another. The work should be done as quickly and freely as possible.

Several patent preparations have been brought forward of late, by which the amateur is saved all the trouble involved in sizing the walls and preparing the material himself. One of these is Morse's Improved Patent Calcarium, which is to be had in about fifty different shades of colour. It is claimed for this that it requires no first coating of size, the part played by the size being performed in this case by using several coats of the colour. The Calcarium is made ready for use by simply mixing it with water. Before applying it, it is necessary to thoroughly cleanse the walls from any old paint, paper, size, or distemper that may be left upon them. Three coats are sufficient for all ordinary indoor work, each one being allowed to dry before the next is applied. A special make is sold for outdoor work. It may be had through any good colourman, or direct from the manufacturers, Alfred T. Morse & Co., Ward Road, High Street, Stratford, E.

Another and similar distemper is the Alabastine, made by the Church Manufacturing Company, 127, Pomeroy Street, Hatcham, S.E. This is to be had mainly in delicate tints of colour, and is also in the form of powder, which is made ready for use by adding boiling water only. It may be used over old wall-paper if the work of removing this is found too tedious. One pound of Alabastine is considered sufficient to cover ten square yards of an ordinary wall, allowing for two coats. Full directions are given with each tin, and as one holding three pounds and a half costs only a shilling, any objection on the score of expense can scarcely be brought forward against this material.

Yet another new invention whereby walls and ceilings may be re-decorated by the amateur himself is "Church's Wall Decorator," which is to be procured from the same firm that has introduced the Alabastine. This is a very fine powder, and bears many of the same good qualities claimed for the other preparation. It is used in much the same way for plain tinting, and is applied either with an ordinary distemper brush or with one of those specially sold by the Company for the purpose. But there are several methods in which a fanciful and more ornamental effect may be obtained.

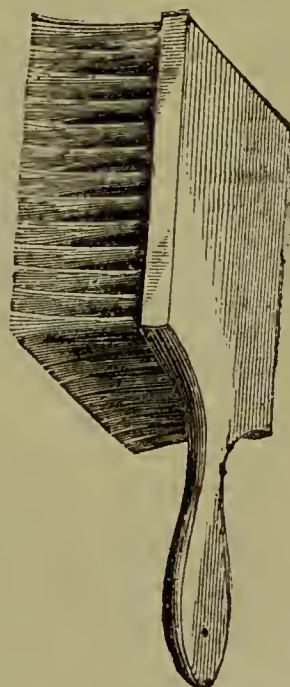


Fig. 7.—STIPPLING-BRUSH.

The plain work should be induced to dry off as quickly as possible; but while the material is still moist, patterns may be made in it with fine and coarse graining-combs, or with combs of which the marks made are rendered still more bold by the removal of every alternate tooth. Some of the coarser designs are formed by placing a rough mould of wood over the composition for an instant. The greater the amount of relief required, and the greater the moulding and working up, the thicker must be the consistency of the material. When a stippled effect only is desired, two persons will be required—one to lay on the distemper, the other to use the stippling-brush over the surface before it has had time to dry. One of these brushes is shown in Fig. 7, but finer and softer kinds still are to be had. The thicker the paste, the coarser should be the brush. A good appearance, as of tiles, can be

arranged by marking the wall off into squares, after a thick coat of the material has been laid, which can be worked up in any required style. A coat of oak varnish should then be applied, over which, when dry, the design may be touched up with oil-colours, and again varnished. The brushes and all utensils employed for the work must be kept scrupulously clean, and must be washed after each time of using. Full directions for various methods of applying the Decorator may be had from the Church Manufacturing Company, who will also give full particulars as to price and colour-cards on application.

Whitewashing Ceilings.—As a general rule, the amateur will do well not to attempt to colour or whitewash ceilings himself, unless he has had so much practice on walls that he feels sufficient confidence in himself to be certain of success. The very climbing about on planks and steps, and the unnatural position which he is obliged to take, renders it a difficult task to undertake for the first time. Two pairs of steps are needed. These are opened out to their widest, and a strong plank balanced between one of the rungs of each ladder, the worker taking particular care to see that the plank is placed so far on each step as to be perfectly secure. The first thing to be done is to wash off all the old wash. This cleansing part of the business must be thoroughly done, or the dirt is likely to show when the whitewashing is finished. The cracks in the ceiling must next be filled in, much in the way before described for plastered walls, and care must be taken to get the surface absolutely smooth, or the wash will not be flat when applied. The ceiling should be again brushed over with a clean brush and clean water, and left to dry.

Meanwhile the whitewash can be prepared. Procure about two cakes of whiting, one pound of size, a ball of blue, and a tablespoonful of powdered alum; mix the whiting to a paste with warm water, melt down the size, and add the whiting to it. The blue should be melted in a little water, then added to the mixture, and finally the alum is well stirred in. Leave this mixture till it is still, and drain it through a fine sieve. When cold, it is ready to be applied. The brush must never be dipped deeply enough into the pail to moisten more than half the length of the bristles. Shake off any superfluous wash against the side of the vessel, and brush the ceiling over backwards and forwards, and in several directions, taking care to finish off by drawing the brush along in one direction only. The brush must be only lightly moved over the ceiling, never ground with a heavy touch against it, or the bristles will leave their marks when the wash is dry. The brush must also

be so passed over any part of the work last done that no join between any portions of the wash can be detected. The worker, for this very reason, will find that the larger the ceiling the more difficult will it be to cover it evenly with wash, and we should therefore recommend him to begin with whitewashing a small cupboard, going on to a dressing-room or little bath-room, and so gaining his experience gradually. If there should chance to be an elaborate cornice or boss in the middle of the ceiling, the sash-tool must be called into requisition, so that even the smallest ins and outs may be reached. The two materials, Alabastine and Calcarium, above described, are as well adapted for ceilings as for walls, and a good effect may be gained by tinting the cornice and boss, and leaving the field of the ceiling white. If it should so happen that the walls of the room are not to be re-papered, it may be necessary to protect the upper portions from any chance splashes of wash; in order to do this the workman should pin up newspapers or old sheets, fastening them to the upper part of the wall only with small drawing-pins. Spots of whitewash that happen to fall on any smooth surface may be easily removed while still soft with a cloth. A skilled hand, however, will do his work so deftly that there is little need for all these precautions; it is generally the inefficient who think it incumbent on them to make a certain amount of untidiness in the room.

Stencilling.—Few arts give so good a result with very little trouble as stencilling; and the fact that it is somewhat mechanical in the method of its execution, is soon lost sight of if pains be expended to touch it up and finish it off after the stencilling of the mere outline is finished. By doing this, there are no limits to the amount of taste that may be expended upon the work, and very varied also are the purposes to which it may be applied. Stencilling, pure and simple, is the means whereby a pattern may be transferred to a large area by cutting it out of a plate of card or metal, laying this on the surface, and painting over the cut-out portion with a colour.

Much of the success of the work depends upon the material of which these stencils are made. Cardboard is sometimes used, and is often preferred by an amateur, owing to the ease with which he may cut the patterns out for himself. It is advisable to draw the design first upon paper, and to paste it down to the cardboard. When dry and firmly adhered, lay the cardboard on a piece of wood, and cut out the ground between the ins and outs of the design with a very sharp penknife. It is often easier to work with a slightly thicker stencil than can be made of a single piece of card, and this

may be arranged by gluing one plate above another before they are cut out. The paint would very soon wear away the cardboard, were not some means taken to preserve it—the simplest being to paint the stencil over thoroughly, not forgetting the edges, with patent knotting. Varnish will answer as well if the knotting is not easily obtainable. Should there be a great quantity of stencilling to be done, several cardboard stencils should be prepared, all exactly alike, as the most substantial will lose its

sharpness of outline in time. Should the worker prefer a firmer stencil, the help of a professional metal-cutter must be called in. Most of the large colourmen's shops have a good choice in stencils ready-cut, or will prepare any special design to order.

The materials for

these in most common use are zinc, tin, and brass. Thin wood is also occasionally employed, and may without much difficulty be cut out with the fret-saw.

In choosing a design, we must always remember



Fig. 8.—INCORRECT DESIGN FOR STENCIL-PLATE.



Fig. 10.—LION PATTERN FOR STENCILLING.



Fig. 9.—CONVENTIONAL ROSE FOR STENCILLING.

that, owing to their peculiar construction, many patterns will not lend themselves to stencilling without a special arrangement of the plate. As an instance of this, we recommend the reader to look carefully at the slight design given in Fig. 8. If this pattern be enlarged, sketched upon a sheet of paper, and then cut out with a small pair of scissors, it will be found that the whole of the centre portion will fall out. To obviate this, it will be necessary to cut the plate with certain small straps or stays left in the plate to hold the different parts together, as shown in Figs. 9 and 10. Here it will be noticed that, were the slanting lines which form the framework for the conventional rose or lion to be carried straight on, so that they touch the half-circles at the corners of the lozenge, the whole of the centre of the plate would fall out, and a considerable amount of trouble would be involved in managing without it. Should these small breaks in the pattern be considered objectionable, they may easily be painted out with a brush after the rest of the work is finished. The probability is that, when seen at a height on the wall, the slight interruption in the lines will not be apparent. When the pattern is so elaborate as to need many "stays" to prevent it from falling to pieces, it is better to have two stencil-plates, the second one supplying those portions which are wanting in the first one. In this case the workman must beware of using the second

plato before the colour laid on with the first is absolutely dry, as the work would be spoilt were it to become smeared in the slightest degree.

One of the usual brushes used for stencilling is shown in Fig. 11. It has, as will be seen by the illustration, very closely-set and short bristles. The brush is not held in the same way as an ordinary tool would be, but the fingers are closed round it as round a dagger; the brush is dipped lightly in the colour, which must be mixed rather dry, and any superfluous paint is shaken off. The stencil-plate is held firmly and closely against the wall, and the brush dabbed briskly over the cut-out portions, until the whole of the wall beneath them is evenly coated with colour. The plate must be carefully removed, or it will be apt to spoil the clearness of the outline. It must, too, be wiped perfectly dry and clean between each time of using, or some of the colour will be certain to run through to the wrong side. For this reason, when a large piece of work is being

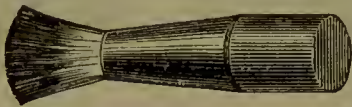


Fig. 11.—BRUSH FOR STENCILLING.

executed, it is convenient to have two stencil-plates, one of which can be drying while the second one is in use. Also, when using two or more colours, a different stencil will be required for each. Thus if the rose in Fig. 9 is to be a different colour to the leaves, it must be cut out on a separate plate, or the two colours will run into one another.

The stencilling must on no account be begun until the distemper of the wall is quite dry, if it has been newly applied. To decide this, breathe upon it, and notice whether the moisture from the mouth sinks in or not. If it does, the walls are still too damp, and must be left for at least another four-and-twenty hours. The amateur will find it rather a troublesome matter to plan out the walls of a room just at first. We will suppose that a dado is to be arranged of stencilling, the upper part of the wall having been distempered a plain pale colour. The first thing to be done is to measure the height of the dado, which must be taken either from the floor or from the top of the skirting-board. The line for the top must be marked here and there with a lead-pencil, and these marks may either be connected by ruling a straight line along the wall with a ruler, or with what is technically known as a "straight-edge," which serves as a ruler. The lines are made with a brush of the peculiar shape shown in Fig. 12, known as a "lining-fitch," which is dipped in paint and drawn firmly all along the straight-edge,

while this is held in position with the left hand. Its one-sided shape enables it to be drawn along without straying over the background. Another way of measuring for the dado is to fix two nails at the right height from the floor, one at each end



Fig. 12.—LINING-FITCH.

of the side of the room. If a piece of fine twine rubbed with red chalk be stretched tightly between these nails, drawn forward exactly in the middle, and allowed to rebound sharply, the mark made by it upon the wall will be sufficiently clear to enable the worker to see where to set the top edge of the dado. In the same way, by fixing one nail just below the cornice, and the other at the top of the skirting-board exactly beneath it, a vertical line may be made; or, if more convenient, a plumb-line can be used. If the chalked line be preferred, the colour of the chalk with which the twine is rubbed should, as nearly as possible, match the main colour of the stencilling, as no difficulty will then be experienced in hiding it beneath the design.

It is always best to begin operations in the middle of one of the sides of a room, arranging so that the most prominent part of the pattern is in the centre, and working on either side of it off into the corners. At the same time, if the upper part of the walls is also to be stencilled, it must be done before the dado, to avoid spoiling this by stray splashes of colour. The "Church Decorator," of which mention has already been made, affords good material for stencilling. It may be used rather liquid, so as to give all the appearance of ordinary colour, or it may be mixed into a paste so thick as to have the same effect as modelling in low relief.

The worker must be careful to choose good and appropriate patterns for stencilling, some lending themselves so much better than others to the work. Ecclesiastical motives must be left for the interior of churches, but there are many others appropriate for domestic purposes. The lion and rose (Figs. 9 and 10) already given are intended to be arranged above the dado as fillings to lozenge-shaped spaces, formed of simple bands of colour. Most star-shaped devices can well be applied to stencil work, so can many crests, and flower and leaf designs. The ever-popular "Greek key" pattern, and most of the variations of the "wave" pattern, can be stencilled without difficulty. In cutting stencils of letters, attention must be paid more especially to those of which the centres will fall out, unless a sufficiently broad stay be left. Such letters are *B*,

O, A, P, D, and other capitals, *a, d, e, g*, and many other smaller letters. Some fancy letters can be cut out and arranged to form a motto round the upper part of walls, or above a mantel-piece, often with good effect. For nursery walls, great amusement may be given to the little ones by stencilling comical silhouette figures of children, men, or animals, such as represent scenes from well-known and favourite nursery tales and songs. Many of the silhouettes prepared for fret-work can be enlarged and adapted to this purpose. Woven materials in common use, such as damask, often afford good suggestions for stencil patterns, as we are told by Mr. C. Leland, in his "*Minor Arts*," that "the cutting of the card through which the loom works is performed on a precisely analogous system to that required for stencil-plates."

It is by no means necessary that the walls of a room only shall be decorated with stencilling. Much inexpensive furniture is often finished with a slight pattern laid on in this way, and few more ornamental and, indeed, durable finishes can be found for the bare spaces of cupboard doors than a bold border with a good corner or a handsome panel pattern, which can be arranged in colours appropriate to the tinting of the rest of the room. Stencilling can be used, too, upon

any of the cheap wooden articles sold for painting upon—such as small cabinets, tables, brackets, and easels; while there is no reason why it should not be employed—with appropriate paint, of course—for borders to linen coverlets, tea-cloths, table-centres, and similar articles. The work may be made additionally rich by the help of embroidery, which can quite well be executed over the colour when this is dry. Upon the smaller wooden articles, which are necessarily open to rather close inspection, the stencilling should only be used for the roughest part of the work, and the design should be carefully gone over afterwards by hand, putting in many little touches of colour and those details which cannot be done by the more rough-and-ready process. With a pattern in which there is constant repetition of the same form, it would be indeed a tedious business to execute a large expanse of it without resorting to some such easy method. Whether used for walls or upon a small surface, the worker must be careful to give much attention to the finishing-off by hand after the stencilling is done, for it is the inattention commonly given to these details which has caused the work to fall of late years somewhat into disrepute, and to be regarded as inartistic and mechanical.

DISEASES OF THE STOMACH.

PEOPLE are apt to make light of disorders of the digestive apparatus, but not unfrequently they assume a very serious aspect. The stomach may not be a vital organ in the same sense as the heart, or the lungs, or the brain, but it exercises a very important function; and when its offices are imperfectly performed, the food is not assimilated, and the whole body suffers in consequence. It is often the starting-point of grave constitutional diseases, such as consumption, Bright's disease, and diabetes. As long as the stomach holds out and secretes a supply of gastric juice, there is hope for the patient; but when it is disorganised, there is no means of conveying nourishment to the system, and the sufferer's condition becomes exceedingly critical. In consumption, for example, the patient more frequently dies from failure to assimilate food than from the actual havoc which has taken place in the lungs. Many of the diseases of the stomach—such, for example, as indigestion, flatulence, and acidity—are amenable to treatment; whilst others, such as cancer and obstruction, are of much more serious import. Malignant disease of the stomach, as a rule, assumes a uniformly unfavourable course, the

duration of life rarely exceeding two years. The symptoms of cancer of the stomach, in their early stages, are not unlike those of simple dyspepsia; and it may be some months before the extreme gravity of the situation is recognised. Again, in ulcer of the stomach, the nature of the affection is easily overlooked; and weeks and months, which might advantageously have been devoted to treatment, are wasted. In the following pages it is proposed to treat of only the very simplest affections of the digestive organs; and should the patient fail to obtain relief from the remedies suggested within the space, say, of a week, he is strongly urged to place himself under the care of a competent physician. There are certain symptoms the occurrence of which renders it imperative that he should do so. First and foremost amongst these is persistent vomiting—vomiting, that is, after almost every meal. When this is the prominent symptom, it may be assumed with a fair amount of accuracy that the patient is suffering from organic disease of some kind, and that the complaint is one essentially unsuited for domestic treatment. When the patient spits blood, or brings up blood mixed with food, the necessity

for a thorough investigation is only too obvious. Diarrhoea, accompanied with pain in the stomach or intestines, naturally excites our suspicion, and makes us fear that we have to deal with something more serious than a simple functional disorder of the digestive organs. Persistent loss of flesh is frequently overlooked, unless the patient is in the habit of being systematically weighed; but when recognised, it may be taken as an indication that some grave organic change is taking place. In some diseases of the stomach, relief may be afforded by a timely operation; but these procedures obviously do not come within the scope of our work. Casual friends, with the very best intentions, are fond of recommending what they believe to be specifics for indigestion and other similar complaints, forgetful of the fact that by so doing they may be tempting the sufferer to lose valuable time, and to neglect the opportunity of obtaining skilled assistance. More than half the cases of cancer of the stomach which come under the care of the physician have, in their early stages, been treated for simple dyspepsia.

Appetite, Loss of.—If a person who usually enjoys good health suddenly loses his appetite, there clearly must be something the matter with him. Possibly the disinclination for food may be only temporary, and may be the result of some indiscretion in diet; but if it is daily becoming more marked, and threatens to be persistent, a strict inquiry must be instigated, and the source of the disturbance detected. It is of no use running off to some drug or quack preparation, for although it may possibly give temporary relief, the great thing is to get to the root of the mischief, and eliminate the cause. Let the sufferer look into his daily life, and ask himself if he can account for his symptoms in any way. Is he working too hard, or is his occupation of too sedentary a nature? Is he in the habit of taking stimulants between meals, or does he smoke to excess? Are his domestic surroundings and relations all that could be desired, and is the house well drained and ventilated, or is it damp and gloomy? Is his food well cooked and of sufficient variety, or are his meals monotonous and uninviting? If a town dweller, does he get out into the fresh country air every week, or is he pent up month after month in the dull, smoky streets? Is he an early riser, or does he stay up till two or three o'clock in the morning smoking, and drinking whisky?

These are all very pertinent questions; and if the patient does not like to answer them himself, he will have no difficulty in finding some candid friend who will give him the desired information. Every man thinks his own house is the perfection of neatness and cleanliness; and yet it may be a matter of notoriety

that he has practically no drains at all, and that there is always a close, fusty smell about the rooms which in itself would take away anyone's appetite. The patient may think that he takes plenty of exercise; but those who know him best will have no hesitation in saying that he rarely walks more than a mile in the whole course of the day. The patient says he is a most temperate man; but if he will only take the trouble to keep an account of his "drinks," he may find that they come to a very considerable amount in the course of the week. Then as to smoking; many people smoke to excess without the slightest idea that they do so, and who would indignantly repudiate the suggestion. It is not the cigar after dinner that does the harm, but the little cigarette at odd times—in the train going home, perhaps—which takes away the appetite and impairs the digestion.

In the treatment of loss of appetite attention must be paid to all these points, which although trivial in themselves are collectively of the utmost importance. The patient can easily see that his bedroom window is left open for a couple of inches at the top at night; he can make arrangements for getting up early and for taking a cold bath, followed by a turn with the dumb-bells or a ride on his bicycle before breakfast. He must determine to knock off smoking as much as possible, and to take no stimulant of any kind. He must take exercise systematically, and should do an amount of physical work daily equivalent to not less than a nine-mile walk on level ground. He should avoid dining alone, should not read at dinner, and should try and get as much variety as possible in his food.

As a means of affording relief, drugs are of undoubted value when the exciting cause of the loss of appetite is removed. For example, there is a medicine frequently prescribed, and known as the gentian and soda mixture. It contains fifteen grains of bicarbonate of sodium, ten drops of chloric ether, and an ounce of compound infusion of gentian. It is taken in this quantity three times a day a quarter of an hour before meals. The alkaline bicarbonate of sodium increases the secretion of the gastric juice; the chloric ether is a slight stimulant; whilst the infusion of gentian, by virtue of its bitter properties, acts as a tonic, and excites a desire for food. Quinine is a still more powerful tonic, and is usually taken as an appetiser in two-grain doses before meals. Some people take it just as it is, and without any addition or flavouring agent, whilst others prefer dissolving it in sherry, or in a few drops of lemon juice. The ordinary quinine mixture contains two grains of sulphate of quinine dissolved in a drop or two of dilute sulphuric acid to the ounce of water. It is bitter, of course, but the clean

bitterness of quinine is not disagreeable to most people. A more convenient mode of taking quinine is in the form of two-grain tabloids. "Tabloids of Bisulphate of Quinine" are kept by all chemists, and will be found convenient for those who are away from home during the day, as the bottle can be readily carried in the waistcoat pocket. Quinine is undoubtedly one of our best tonics, and even a few doses may do much to restore an impaired appetite. Other good tonics are calumba, quassia, and chiretta, all of which may be given before meals, either in the form of tincture or infusion. They have much the same action as gentian, but are perhaps not quite so palatable. The dose of these tinctures is a teaspoonful in water; of the infusions two tablespoonfuls.

As people get older and take less exercise they can do with less animal food, and are often greatly benefited by adopting a dietary in which the vegetable element predominates largely. Their food should be light and nutritious, and should be well and carefully cooked. It often happens that with loss of appetite there is impairment of digestive power, from deficient secretion of gastric juice. This fortunately is a condition which is easily remedied, for pepsine, which is the active constituent and digestive ferment of the secretion of the stomach, can be supplied artificially. Fairchild's Pepsine, either in powder or scales, should be taken twice a day in five-grain doses immediately after meals. It will facilitate digestion, improve the tone of the digestive organs, and indirectly stimulate the appetite.

Acidity.—Acidity or heartburn is a form of indigestion or dyspepsia. It is a very common and it must be admitted a very distressing complaint. It usually comes on after meals, and perhaps lasts an hour or two. The gastric juice is always acid, but sometimes it is secreted in too great abundance, or there may be an irregular fermentation of the food giving rise to the formation of some morbid acid. The unfortunate sufferer complains of burning pain in the chest, there is a nasty taste in the mouth, the teeth are set on edge, and there is a regurgitation of sour fluid into the mouth, accompanied by flatulence. The patient often says that he feels like a vinegar bottle inside. All this arises from some error in diet or in mode of life. Possibly the patient is overworked, he hurries over his meals, masticating his food imperfectly, and allowing no time for the process of digestion to take place. This is easily remedied. He must take plenty of time over his meals, allowing at least an hour for dinner, and must do no mental work for at least an hour afterwards. Perhaps he dines alone. Nothing can be worse; he must try and remedy this by joining a club, or possibly by

making some arrangement to board in a family or with friends.

Acidity constantly arises from a defective condition of the teeth. The molars are decayed, and there is nothing with which to grind the food, which is swallowed in large pieces very imperfectly masticated. Here the dentist's art comes into play; the stumps must be removed, the decayed teeth must be stopped, and those which are wanting must be replaced. If it is to be done at all, it must be done well. Cheap dentistry is a mistake, and a good set will not only prove an immense comfort, but will last a lifetime. It is a mistake to go to any casual dentist, and the best way is to ask a doctor to name a thoroughly competent and reliable operator. Of course the teeth will not be comfortable at first, but after a time they will settle down to their work, and will prove a real blessing. Many people when they get a new set of teeth take them out to eat with; nothing can be more absurd. The patient should wear them always—night and day. They get dirty, it is true, but they can be kept clean if taken out and carefully brushed with a tooth-brush and a little soap and water night and morning. If they are fitted properly, there is not the slightest fear of their falling out, and the patient may sleep in them with confidence. They will not interfere with speaking, not even with public speaking. The taste may not be quite so acute for the first week or two, but this soon gets all right, and the brand of a wine or of a cigar is detected and appreciated with as much readiness as ever.

Perhaps the patient leads too sedentary a life and requires more exercise. A bicycle or tricycle is the best remedy for this. A man—and, for the matter of that, a woman too—soon gets in the way of using a tricycle. A good machine costs twenty or twenty-five pounds, and stabling for it may be had for eightpence a week. A good ride should be taken every night and morning. A novice will feel tired and stiff after a couple of miles; but as his muscles develop, and get accustomed to the work, he will think nothing of a run of twenty miles or more. The circulation is improved, the digestive organs are strengthened, and acidity is a thing of the past.

The diet may with advantage be regulated. The food should be ample and varied in quality; green vegetables, salads, fruits, and sweets should be avoided, and the bowels should be regulated by some mild aperient, such as an occasional five-grain rhubarb pill. Wine may be taken in moderation with meals, or, if preferred, whisky and soda-water. Stale bread is better than new, and brown bread or wholemeal biscuits are better than white. Smoking is not injurious, but it should be confined to one cigar or a pipe after dinner.

If these directions are faithfully carried out, very little medicinal treatment will be required. The best remedy is Bicarbonate of Soda Tablets. They may be obtained at any chemist's in little bottles suitable for carrying in the pocket for sixpence. One or two should be taken immediately after meals. They should never be taken before meals, or they will increase the secretion of acid. They may be swallowed with a little water like pills, or they may be allowed to dissolve slowly in the mouth. When flatulence is a prominent symptom, the "soda-mint tablets" are better; and of these, two should be taken after meals only. They may be obtained in bottles of a hundred for a shilling. The oil of peppermint which they contain acts as an antiseptic, whilst the bicarbonate of soda neutralises the excess of acid. Another simple and very efficacious remedy is glycerine, which is also antiseptic. A teaspoonful should be taken in water immediately after dinner; and if the sweet taste is objected to, it may be covered with a few drops of lemon juice. Charcoal biscuits are a favourite remedy, and may either be bought at the shops or made at home. They are best eaten towards the end of the meal, or may be taken alone afterwards. A teaspoonful of the Kepler Extract of Malt in a little milk is a favourite with many people, and is undoubtedly useful. It is best to avoid sugar, and the new sweetening agent, saccharine, forms an excellent substitute. It is very sweet, and a single "saccharine tablet" containing half a grain will be found ample for sweetening the post-prandial cup of coffee. Acidity is a disagreeable complaint, but it is one which is readily cured, and the appropriate remedies are within the reach of everyone. It is of no use taking medicines unless the directions respecting diet, and especially exercise, are carefully observed. Late hours are bad, and early rising is beneficial.

Flatulence.—Flatulence is a form of indigestion due to the accumulation of gases in the stomach and intestines. It arises from irregular fermentation of the food, which undergoes a process of decomposition instead of being digested in the usual way. Flatulence gives rise to distension, which is always distressing, and not infrequently involves the necessity of loosening the clothes. The gases, too, are often discharged suddenly, to the great distress of the sufferer. In addition to the feeling of distension, there is often actual pain in the abdomen, resulting from the retention of food in a partly-digested state.

This condition, which often excites unnecessary alarm, is fortunately in most cases readily curable. Almost any drug which possesses antiseptic properties and checks fermentation proves efficacious. For

example, carbolic acid and creasote answer admirably, but their taste is not very agreeable, and most people prefer a few drops of some essential oil, such as oil of cajuput or oil of peppermint. The oil of cajuput seems to be the popular favourite, and three drops may be taken frequently on sugar, the relief being usually very prompt. Charcoal, too, is efficacious, and most people take it in the form of the charcoal biscuits which may be obtained from most bakers. When the flatulence is associated with, if not dependent on, deficient secretion of gastric juice, a good plan is to take fifteen grains of bicarbonate of soda in an ounce of compound infusion of gentian before each meal. When the weight at the pit of the stomach is the prominent symptom, and is experienced chiefly after meals, nothing can be better than pepsine—a couple of pepsine tablets, or ten grains of Fairchild's Pepsine, being taken towards the end of the repast. When, in addition, there is constipation, nux vomica is the best remedy. Ten drops should be poured into a tumbler of cold water, which should be sipped slowly in the morning whilst dressing; the dose, with rather less water, being repeated immediately after dinner.

When other means have failed to effect a cure, massage may be resorted to with advantage; but if done at all, it must be done well. It is never safe to employ any person whose advertisement may be seen casually, and it is best to consult a doctor, or some recognised authority on the subject, who will be able to find skilled assistance. The details of the procedures to be employed must be thought out carefully, so that the maximum relief may be afforded with the minimum of inconvenience to the sufferer. Much, too, may be done by attention to the diet. Vegetables should as a rule be eschewed; such things as greens, turnips, carrots, lettuce, watercresses, and radishes being specially avoided. Salad is rarely or never admissible, and fruit of all kinds had better be avoided. New bread should not be taken, and stale bread, or toast, or wholemeal biscuits, must be substituted. Pastry and sweets of all kinds are injurious, but the patient may take meat, or fish, or game without hesitation. It is better to avoid soups, and the amount of fluid taken at any meal should not much exceed two claret-glasses. Stimulants are not altogether prohibited, but beer is not admissible; and the best thing at dinner is in the majority of cases a little good old Scotch whisky diluted with water.

Hiccup.—Hiccup, or hiccough, is usually due to over-distension of the stomach, or to the accumulation of wind owing to imperfect digestion. It occurs far more frequently in children than in adults. As a rule, it is not a serious matter, but it is an unfavour-

able sign should it supervene in the course of one of the acute diseases, such as typhoid fever.

The treatment of this condition is simple, and usually a teaspoonful of sal-volatile in a wine-glass of water will effect a complete cure in a few minutes. Chloric ether is also efficacious, and fifteen drops in a little water will cut short an attack. An emetic may be given, but it is rarely necessary to resort to such violent measures. To prevent a recurrence of the complaint, attention must be paid to the diet. Soup should be avoided; or, at all events, a few spoonfuls only should be taken. Most vegetables, with the exception of potatoes, should be dispensed with, and salad should be regarded with suspicion. Fluid of all kinds should be taken in small quantities, and at meals the stimulant should be limited to a single glass of sherry or claret. The bowels should be kept open, and plenty of exercise should be taken.

The hiccup of drunkards is a well-known complaint. There are many remedies for it, but the most efficacious is abstinence from stimulants. As a temporary measure, and with a view of subduing an acute attack, three drops of tincture of *nux vomica* and a drop of tincture of capsicum should be taken in a glass of water every four or six hours.

Indigestion.—There are many kinds of indigestion, but the most prevalent form is that known as atonic dyspepsia, in which there is a deficient secretion of gastric juice. It is met with both in men and women, and occurs at all ages, although the impairment of digestive power is usually most marked in infancy and extreme old age. Impairment of the functions of the stomach and digestive organs is readily induced by conditions of the system associated with depressed vitality. Relaxing climates have much to answer for, and afford a ready explanation of the digestive disturbances from which old Indians so frequently suffer. Other common predisposing causes are deficiency of light and air, long-continued and depressing moral emotions, and the *ennui* of insufficient occupation, both mental or physical. The abuse of alcohol, tobacco, tea, and coffee, and even condiments, is another potent cause.

Many people live "well," but live indiscreetly. They take far more food than they can possibly digest, and are not careful in its selection. The custom of drinking large quantities of fluid at the commencement of a meal is a bad one, as it dilutes the gastric juice and prevents it from doing its work. Irregularity with regard to meals is extremely injurious. Many people who are busily occupied go almost all day without food of any kind, whilst others manage to crowd in three heavy meals in the course of nine or ten hours, taking breakfast perhaps at nine, luncheon at half-past one, and dinner at

seven. A meal requires at least five hours to digest, and surely it is not too much to ask for the stomach that so overworked an organ should have at least two hours' rest before being called on to resume its functions. Many delicate people think it necessary to eat often to keep up their strength, but fail to recognise the fact that when meat is eaten three times a day and taken freely, the addition of such articles as milk, eggs, wine, and beef-tea in the intervals is not altogether beneficial, and is far more likely to do harm than good.

The amount of food required to maintain the weight and nourishment of the body depends to a very great extent on the expenditure of force, and on the exercise, both mental and physical, performed. A person who sits at home day after day, and does practically nothing but read the paper, cannot expect to have a good appetite, and he should not be surprised if the digestive organs give him trouble. A man who leads an active life can, if there is no organic disease of the stomach, eat and drink almost anything. His liver acts well, the digestive juices are secreted plentifully, and the function of digestion is with him, as it ought to be with everyone, a painless process.

Indigestion is undoubtedly a very trying complaint, and the symptoms which it engenders make the patient's life very miserable. There is usually a feeling of discomfort, amounting perhaps to weight or uneasiness, in the stomach after meals. This is due to the abnormal slowness with which digestion takes place, and it may be prolonged for some hours, almost, in fact, until it is time for the next meal to be taken. In addition to the pain, there is a sense of distension, accompanied by persistent and distressing flatulence. There is also a burning feeling in the stomach, which gives the sufferer the impression of being due to the presence of an excess of acid. Constipation is a common accompaniment, and, unless the bowels are relieved by artificial means, the motions are hard, dry, and passed with much difficulty and straining. Palpitation is another disagreeable indication of the existence of dyspepsia, and not infrequently makes the patient think that he is suffering from disease of the heart. Shortness of breath, and inability to walk far without discomfort, may also be experienced, especially when the digestive trouble is of long standing. The loss of flesh is often most marked, the patient wasting away slowly but surely, so that after a time his muscles lose their accustomed firmness, and his powers of work are materially curtailed.

The probabilities of recovery depend very much on the mode of treatment. If the patient is well advised, and will be content to carry out the directions laid down for his guidance, he may rest assured that

he will soon get well; but if he neglects his case, matters soon go from bad to worse, and he will find himself in danger of being reduced to the condition of a permanent invalid.

In the treatment of dyspepsia much necessarily depends on a judicious selection of articles of diet. Three moderate meals are usually sufficient, with perhaps a light accessory meal before retiring to rest. This, of course, presupposes the ability to take food; but when the stomach is very weak, it may be necessary to confine the attention for a time to such articles as peptonised milk, peptonised beef-tea, eggs, calf's-foot jelly, and the like. When meat is taken, it will usually be found best to limit the selection to beef and mutton, avoiding, of course, boiled beef. Fish is useful, but care is needed in its choice, and especially in preparing it for the table. Most white fish are safe enough, but salmon is, as a rule, unsafe for those whose digestive powers are not of the most robust order. Soup, if taken at all, should be taken in the smallest possible quantity—only a tablespoonful or two—as anything like an excess of fluid at the beginning of a meal must of a necessity prove injurious. Vegetables need not be excluded, but they should be taken cautiously when there is a tendency to flatulence. Potatoes should always be well boiled, and should be mealy. Turnips, parsnips, onions, and vegetable marrow, are best avoided. Bread should not be eaten new, and it will be found practically that the aerated can often be taken when the ordinary forms disagree. A better plan, however, is to substitute for bread either biscuits or toast, especially at dinner. Pastry had better be avoided, but there is no objection to a small piece of cream cheese. Sugar is almost uniformly inadmissible, and in its place should be used tabloids of saccharine, which are not only sweetening, but do not produce acidity. Condiments—such as mustard, vinegar, chutney, and the various sauces—are useful in stimulating the appetite. Tea should be avoided, and coffee at breakfast will be found preferable. It will be understood that these directions are based on general physiological principles, and that it can hardly be expected that they will apply to every case. No two people are exactly alike, and this applies with especial force to peculiarities of digestion. The general rules are laid down, and the exceptions must speak for themselves.

With respect to alcoholic drinks, much must depend on the general habits, and to some extent on the position of life of the patient. There is one thing, however, to bear in mind, and that is that wine, to be of service, must be good. A new wine is an abomination, and is most prejudicial. As regards the choice of wine, it may be laid down as a rule that sherry, madoira, and marsala are not

suitable for the victim of indigestion. Claret if good is admissible, but burgundy nicely warmed will usually be found well adapted for the requirements of the atonic dyspeptic. Champagne in moderation is excellent, but can hardly be regarded as an everyday drink. When wine is not taken, a little old Scotch whisky in half a tumbler of soda-water is the best, but it must be taken only twice a day, at meal-times.

In the way of medicinal treatment there is fortunately a great deal to be done for the chronic dyspeptic. One of the best remedies is pepsine, which supplies artificially the chief constituent of the gastric juice. The dose of pepsine usually recommended is far too small, and if given at all it should be given in full doses. Three or four tabloids of pepsine should be taken with a little water immediately after meals. Many forms of pepsine are well-nigh inert, but the tabloids are reliable, and may be taken with confidence. They relieve the sensation of pain and weight in the stomach, and check the fermentation, on which the flatulence depends. Another good remedy is the Kepler Extract of Malt, which should be taken in teaspoonful doses three times a day immediately after meals. It may be taken by itself, or preferably spread on a dry biscuit. It digests the starchy elements of the food, whilst pepsine digests the meat and nitrogenous ingredients. When acidity is the prominent symptom, the tabloids of *nux vomica* are recommended. Each tabloid contains one drop of the tincture, and two or three of these should be taken at short intervals both before and after meals. When constipation is troublesome, the Anti-Constipation Tabloids—two or three in the morning before breakfast—will be found most useful. Capsicum is another good remedy for all forms of indigestion, and a tabloid triturate of capsicum taken several times a day will be found most useful, quickly allaying the sense of weight and tightness in the chest and abdomen. For flatulence pure and simple, five drops of pinol on a piece of sugar can be safely recommended, the dose being repeated as often as necessary. For improving the general health, and giving tone to the system after a prolonged attack of dyspepsia, nothing is so efficacious as Fellows' Syrup of the Hypophosphites, an old-established and favourite remedy. A teaspoonful is taken in a little water three times a day after meals. It is a powerful nervine tonic, and the phosphorus acts as a stimulant to the nervous system; whilst the small dose of strychnine which it contains acts beneficially on the stomach and intestines, promoting their secretions and aiding digestion.

In addition to medicines, the patient must take

exercise. Exercise is essential for recovery. No man can expect to be well, or to maintain his digestive organs in a state of efficacy, who does not work. To be of the slightest avail, it must be active exercise in the open air, and should be resorted to systematically.

There is another point deserving of attention, and that is the condition of the teeth. If the patient has no teeth, or if they are decayed, he clearly cannot masticate and cannot digest. Before commencing other treatment he should consult a thoroughly reliable dentist, and have them seen to. Stumps will have to be extracted under gas, cavities will have to be filled, and a cast will perhaps have to be taken for a new denture. First-class work of this kind is of necessity somewhat expensive, as it involves many hours of skilled labour; but the comfort and the improvement in the state of the digestive organs are worth a good deal. It is of no use taking exercise, or consulting a doctor, if the preliminary step of getting the teeth put right has not been seen to.

If the patient under this treatment should not improve in a week or two, he may rest assured that there is something more serious the matter with him than simple dyspepsia. Perhaps there may be a chronic ulcer, or a tumour, or there may be some obstruction at one of the orifices of the stomach. In every case of doubt or suspicion skilled advice should be sought without a moment's delay. There can be no more fatal error than to suppose that the symptoms are due to indigestion when they are in reality caused by the presence of some insidious organic disease. Progressive and persistent loss of flesh, however slight, is an ill-omen, and demands the most rigid investigation.

Offensive Breath.—The breath in health should be perfectly sweet and devoid of odour. Offensive breath may arise from a number of causes. One of the most common is decayed teeth. Directly a tooth begins to decay, decomposition sets in, and the resulting odour is most offensive. There is but one course to be taken, and that is to have the tooth stopped; or, if it is too far gone for that, it must be extracted. Not only the tooth which is most decayed must be seen to, but all the teeth must be put right. There will be no amelioration of the mischief until this is remedied. Many people, without actually having decayed teeth, fail to keep them clean and in good order. They should be thoroughly brushed at least twice a day, and three times is better still. It is not sufficient to brush the outside, but the inside should be brushed as well, so as to prevent the formation of tartar. When a false set of teeth is worn, they will have to be taken out and brushed at

least twice a day. Tincture of myrrh is one of the best things for the teeth, as it braces up the gums and keeps them in a healthy condition. The tooth-brush should not be hard, or it will wear off the enamel and expose the dentine.

Another cause of offensive breath is persistent smoking. The nicotine is deposited as a fine film on the teeth and other parts, where it gets mixed with particles of food and becomes offensive. A persistent smoker should be very careful indeed about the state of his teeth and gums.

Indigestion is a common cause of the complaint. The bowels should be freely opened to begin with, and then the following mixture should be taken three times a day before meals for a week:—Bicarbonate of soda fifteen grains, tincture of capsicum a drop, compound infusion of gentian a drachm, infusion of gentian one ounce. After this a course of Fellows' Syrup of the Hypophosphites will be found useful.

Another common cause of offensive breath, especially in young people, is what is called *ozæna*. Large masses of hardened mucus accumulate in the nostrils, obstruct the passage of air, and are expelled only with great difficulty. This is a condition which requires the most careful attention, or it may lead to the destruction of the bones of the nose. Much good may be done by proper medicinal treatment, and temporary relief will be obtained by syringing out the nostrils three or four times a day with a pint of tepid water, to which a couple of tablespoonfuls of Condyl's Fluid have been added. It is essential to consult a physician in these cases, as there may be a polypus. The inhalation of chloride of ammonium fumes from a Vereker inhaler (*see* p. 121) will probably prove of service.

As palliative measures, washing out the mouth with Condyl's Fluid and water, sucking carbolic acid lozenges, and the use of Florida Water, may prove useful. They rarely prove curative, however, and the condition is one which requires thorough investigation and treatment.

Vomiting.—Vomiting is one of the most distressing symptoms of indigestion, but it is not uncommonly associated with disease of the stomach and various other parts of the body. It is frequently the first indication of an attack of some acute disease, such as scarlet fever or measles. It occurs in many brain affections, especially in children, and it is often a very nice point to determine if a sudden attack of vomiting is due simply to some stomach derangement or to a more serious form of disease. The following table summarises the differences between "brain vomiting" and "stomach vomiting."

BRAIN VOMITING.

1. There is little or no nausea and the vomiting continues in spite of the discharge of the contents of the stomach.
2. There is no tenderness over the stomach, and pressure is borne without inconvenience.
3. The tongue is clear, the breath sweet, and the bowels are obstinately confined.
4. Headache comes on early, and is a prominent symptom.
5. The stomach is emptied without effort.
6. There is no disgust for food.

STOMACH VOMITING.

1. The nausea is relieved, at all events temporarily, by the discharge. It returns directly food is taken.
2. There is tenderness over the stomach, and pressure induces an inclination to retch.
3. The tongue is dirty, the breath offensive, and there are griping pains in the stomach, with diarrhoea.
4. Headache comes on after the other symptoms.
5. The vomiting is preceded by retching.
6. There is complete disgust for food.

Vomiting occurring in women the first thing in the morning may be a symptom of early pregnancy, or of some displacement or affection of the womb. Many women suffer occasionally from vomiting during the whole time they are suckling. The common cause of morning vomiting in men is excessive indulgence in alcohol. Many people who suffer from this condition never by any chance get intoxicated, but they systematically take more than is good for them. They drink perpetually from the first thing in the morning to the last thing at night, but take only comparatively small quantities at a time. There is the brandy and soda soon after breakfast, the glass of sherry as a pick-me-up on getting to town, a pint of champagne at luncheon, a "nip" about four o'clock, a sherry and bitters before dinner, an assortment of wines at dinner, and perhaps two or three whiskies in the smoking-room or billiard-room afterwards. The patient would deny most strenuously that he ever indulged to excess, or took more than was good for him; and yet this chronic drinking—and perhaps smoking—going on month after month gives rise to a condition of catarrh of the stomach, which renders that organ extremely irritable and the retention of food difficult.

There are many remedies for vomiting; one of the most popular being small doses of ipecacuanha wine frequently repeated. A teaspoonful of ipecacuanha wine is added to half a pint of water, and of this a teaspoonful is taken every ten minutes until the nausea and vomiting are relieved. It is of essential service in the treatment of the vomiting of pregnancy, and often checks the symptom after other modes of treatment have been tried in vain. Small doses of *nux vomica* often succeed equally well. One of the tabloid triturates of *nux vomica*, containing one drop in each, may be given every hour for six hours or until relief is obtained.

Creasote is sometimes employed to check vomiting, two or three drops being made into a pill and taken every four hours. Another favourite remedy is bismuth. The bismuth mixture contains fifteen

grains of carbonate of bismuth, and ten grains of carbonate of magnesia, suspended in an ounce of water, with a drachm of mucilage of tragacanth, and this dose is taken three times a day before meals. Three drops of chloroform in a tumbler of water often afford relief more speedily than anything.

In exceptional cases stimulating applications to the pit of the stomach are useful. A mustard poultice may be employed for this purpose, or a small blister, or even a good coat of iodine liniment applied freely with a brush.

Various forms of tabloids are useful, the best being the sub-nitrate of bismuth tabloids containing ten grains in each, the bicarbonate of soda tabloids containing five grains, and the soda-mint or neutralising tabloids. They are taken in a little water before meals.

Stimulants should as a rule be avoided, but a glass of dry champagne or a little brandy and soda-water may in exceptional cases prove useful.

The greatest attention should be paid to the regulation of the diet; and when the vomiting is persistent, it is better not to attempt solid food, but to rely on milk and soda-water. When almost everything is rejected, liquids must be given in the smallest possible quantities, such as a teaspoonful of beef essence at a time.

In the vomiting of children, lime-water should be added to the milk, the best proportion being one of lime-water to four of milk. The most scrupulous attention must be paid to the cleanliness of the bottle and other utensils employed, or the child will suffer from diarrhoea or thrush.

Sea Sickness.—The immediate cause of sea sickness is supposed to be a shock or a succession of shocks to the nervous system resulting from the motion of the vessel. A somewhat similar condition may be induced by any forcible motion to which the sufferer is unaccustomed, such as is experienced in swinging. Many people suffer from *malaise* from railway travelling, or even from riding in a carriage with their backs to the horses. The nervous system is surprised by the unaccustomed movement, and is unable, at a moment's notice, to adapt itself to the new order of things. The action of the heart and blood-vessels is deranged, there is a deficient supply of blood to the brain, and the result is a want of circulation in the extremities. The stomach is also affected, the gastric juice is secreted in excessive quantity, and the result is an attack of sickness. After a time habit steps in, and serves to control the excessive susceptibility. Undoubtedly constipation and want of exercise add to the trouble experienced by sea voyagers.

It is needless to describe the symptoms of sea

sickness at any length. In addition to the persistent vomiting, depression is always a prominent feature. Diarrhoea is sometimes present, but the patient far more frequently suffers from constipation. The appetite is temporarily lost, and even the sight and smell of food may become loathsome. Coldness of the extremities, headache, thirst, and pain in the stomach are frequently experienced. There is a tendency to sleep, and anything like physical exertion is out of the question.

Most people on a long voyage get over their discomfort in from three to five days, but this is not always the case, and exceptionally it may persist as many weeks. Death has been known to result from sea sickness, but this is very rare.

With regard to treatment it may be stated that there is no known means of preventing sea sickness in those who are susceptible to it. As a matter of precaution, however, the diet taken before embarking should be light, and the patient once on board should remain on deck as long as possible. The temperature of the body should be maintained by a plentiful supply of rugs and shawls, and a hot-water bottle should be applied to the feet if necessary. One of the best medicinal remedies is bromide of sodium. A mixture should be

made containing two drachms of the bromide, a drachm and a half of chloric ether, and a drachm of syrup of Virginian prune in tablespoonfuls of water, and this should be taken every three hours, or even oftener. Another excellent remedy which may be used in conjunction with the bromide is cocaine administered in the form of tablets, each containing one-third of a grain, one being taken three or four times a day. With these two remedies the patient is as safe as any medicine can render him. Syrup of chloral taken in teaspoonful doses in water is a favourite with many people, but is not always successful. Trinitrine tablets are often efficacious, one being taken every three hours. A supply should be laid in before starting on a long voyage.

When the sickness has persisted for some days, a hypodermic injection of morphine often stops it by ensuring sleep. The patient should be made to keep his berth, and should lie on his back with his head low. It is not a good plan to abstain entirely from food, and beef-tea in small quantities should be taken frequently. Stimulants do very little good at first, but after a time a glass of champagne or a little brandy and soda-water, will be found acceptable. Some people recommend the application of ice to the spine, but it is not a very agreeable remedy.

DOGS AND CATS.

In many households you find one dog, and sometimes two. It is not necessary to keep a second dog as a companion to the first; if our canine friend could speak, he would tell us that he is quite content to be the only dog in the social circle, and, indeed, rather prefers to be, and that, when he longs for the companionship of his kind, he can seek it beyond his own gates. The favourite dog is nowadays often a high-bred pedigree animal, whose ancestors have made a figure on the show bench, while his companion may be a little, uncouth, and unkempt rascal, that anything is considered good enough for, whose home is in the kitchen or out of doors, his bed perhaps the mat, and his allowance of bites and buffets about in equal proportion. And yet he is more healthy, and happy, too, probably, than his more aristocratic fellow, who lives in the drawing-room, and makes his bed at night on the sofa with the softest cushions. The kitchen cur is never ailing; he always licks out his dish, and looks for more; his skin is always whole, except after a fight; and he is ever ready to engage in a romp or to chase a rat. The parlour dog is frequently ill; his food, although it may be the

richest and best that can be thought of, is often untouched in the pannikin; he is troubled with his skin, he is troubled with dyspepsia, and has often to visit the veterinary surgeon, while the only pleasure that he really could enjoy—a free-and-easy romp with curs on the street—is denied him, lest he should be lost or picked up by some hawk-eyed dog-stealer, and never heard of more.

The lesson to be learned from the above simple facts is obvious enough. Under the guise of "kindness" to a favourite dog, we often treat him with real though unintentional cruelty, and our affection for him, if analysed, would sometimes turn out to be simply selfishness. This is all the more apparent if, when the animal grows old, or turns chronically ailing, we no longer care for him, and permit him to go utterly neglected, when a little judicious attention and doctoring might make his latter days comfortable and happy enough.

There is no doubt about one thing: the dog is by far the wisest and most faithful domestic animal we possess, and well repays all the trouble we can bestow upon him. When the attention given him is well directed, we are rewarded with having a happy

and contented companion or guard; if, on the other hand, our treatment of the dog is wrong, he is never either well or happy, and we cannot help finding him a trouble.

Of late years, owing to the efforts of dog-breeders and the promoters of dog shows, but above all to the pen-energy of writers on dogs, mongrels have become far fewer in number. It is a well-known fact that the pure-bred animal is in every way the equal in sagacity to the cur, that he is less quarrelsome and snappish, more honest, and quite as faithful to his master's interests. If we add to this that he costs no more to keep, it would seem that the odds are in favour of the pedigree dog, notwithstanding the fact that the purchase money will be somewhat higher.

Choosing a Dog.—Having made up our minds that a dog is all but a necessity, either as a companion or as a guard for house and property, the next thing is to consider what breed shall best meet our requirements, and what space or accommodation we have to spare for him, either outdoors or in. If the animal is to be an indoor dog, the question is speedily solved, for he will almost at once establish himself as a member of the family, and, if judiciously treated, will certainly not constitute himself a troublesome lodger. Nevertheless, *size* and *coat* have to be thought about before making a purchase. A dog as large as the baby's bassinette requires more room to move about than can be spared in a small house, and is not to be recommended, albeit his very appearance may be a terror to evil-doers. Again, large dogs eat more, though not in proportion to their size. A Collie will eat about as much as a Newfoundland, because he is far more active; and a Mastiff about as much as the two together. A large dog in a small house is often much in the way, and, as he gets bullied for being so, he becomes morose and unhappy, and does not thrive.

Coat is the next consideration, and, if one lives in a large town or city, a short-coated dog should be chosen. The long-haired breeds bring in mud, and spoil the carpet and furniture generally. If, on the other hand, the dog is to live out of doors altogether, he will either have a kennel to himself, to which he will be frequently chained, or he will have the run of the yard. We will speak of kennelling presently; in this place we need only remind the owners of outdoor dogs that they have a duty to perform to their neighbours as well as to themselves. Some dogs howl at night, or bark fitfully without any real occasion. One's neighbour may be a light sleeper, or some member of his family may be ill, and the mistake in keeping such a dog outside, or indeed in keeping such an animal at all, is obvious. Before, however, putting him away, he ought to have a

chance. It is very often because he is not properly fed, watered, exercised, and bedded, that he howls. Make his life more happy, and if after this the fault is continued, then he ought to be either kept indoors or sold into the country. In order to facilitate the choice of a good household or companionable dog, we offer the following hints about the characters of some well-known breeds.

Guard Dogs.—Quite a number of different breeds may be included in this section, but we choose those only that have earned a character as guards of person or property. Ranking according to size, first comes the *British Mastiff*. We talk only of well-bred dogs when we say that the mastiff, if not kept constantly on chain, is most obedient to command, exceedingly affectionate, and as gentle as a lamb. He is playful, and fond of children and little dogs. As a guard it would be difficult to find his superior, but, being of enormous size, he is best kept out of doors.

The *Great Dane*, although not so heavy, is about equal in size, and quite as good a guard. Although, as a rule, safe and quiet enough with those he knows, we cannot recommend him to be kept where there are children, nor to be taken out after dark. He is apt to be carried away by his feelings, and to get his master into trouble. If a dog of this breed is chosen at all, he should be procured when quite a puppy. He would then do well.

Retrievers are really field-dogs, but they are exceedingly sagacious, and make most loving and faithful companions and guards. They are best kept indoors, if one does not live in town. The fault in them is, that they do not stand being checked, and it is well known that Retrievers, especially the curly-coated, do their share—fully—of all the biting cases we hear and read about.

Bulldogs.—Next to the Mastiff the Bulldog is the best guard we have. His very appearance is in his favour as a guard. We think it unlikely that a tramp, for example, would visit a house twice at which he had seen a Bulldog. This dog is certainly not a beauty; and the better he is in "points," the uglier and more terrible-looking he is. In disposition, however—in affection to his master and all his master's family and friends, and in general docility, except when on duty—it would be hard to find the Bulldog's superior. We have heard it said that they are uncertain in temper. This is certainly wrong. If ever a Bulldog shows signs of uncertainty of temper, it is because he has been very wrongly treated.

Next in size comes the *Airedale Terrier*. This dog is about the largest terrier we have, often weighing almost as much as a Collie. Like nearly all terriers,

he is a most faithful guard, and very loving and gentle in disposition. But, like most terriers, he is apt to be carried away by his feelings, as regards fighting with other dogs on the street; or, if not properly trained, he may get into the evil habit of killing cats or poultry. Then we have the *Irish Terrier*, whose character is much the same; the *Bedlington Terrier*, and the hard-haired *Scotch Terrier*. The *Skye Terrier* may or may not be a fairly good guard. He is much fancied by some, though, being very long-haired, he is a nuisance in a city.

All the dogs above named will not only give warning on the approach of danger, but will hold their ground and fight. The smooth-haired *English Terrier* is somewhat too fine to fight for his owner, but he is very keen and watchful, and is, therefore, to be recommended. The last to be mentioned is a dog not long ago introduced into this country from Germany—the *Schipperké* (pronounced Skipperkie). He is a tiny, smooth-coated, black, tail-less, terrier-looking dog; all life, and fun, and drollery, but one of the best little guards we have. He is, of course, too small to do battle, but he never fails to give warning; and if any dog in the kingdom can claim the title of burglar's terror, it is the Schipperké.

We have only one other hint to give about guard dogs. In lonely country places, where only one dog is kept, a tiny one like the Schipperké is often more to be relied upon than a large fighting dog, if he can have free access in or out of the house all night. This can easily be secured by having what is called a "cat-hole," with screen or movable flap-shutter, in the back-kitchen door. No fears need then be entertained of any burglars. The little fellow's kennel is placed outside, and to this he is taught to retire every night, after a light supper. He will rush in and give an alarm if anyone comes about.

Companionable Dogs.—Under this title we class those dogs that are faithful, loving, and true, but which are not necessarily wanted as personal guards, though able perhaps to take an owner's part, if need be. They must be good-tempered, if anything, for they are as often as not the companions of ladies and the playmates of children. Ranking according to size, we have first the lordly *St. Bernard*. This animal must be well bred, for no breed seems to degenerate sooner in size and in all a dog's best qualities, and a mongrel *St. Bernard* is a pitiable sight. In character he is wonderfully sagacious, very affectionate, good-natured, not quarrelsome with other dogs, and an excellent companion while travelling either by night or by day. He does not eat so much as the *Mastiff*, and, if well cared for, is always clean in coat—which may be either long or short—and healthful. Next in size comes the *New-*

foundland. There are two sorts—the true *Newfoundland*, and the black-and-white or *Landseer*. The former is all black, and the coat of both should be straight and massive. In character this dog is everything anyone could desire. He is most noble and affectionate, an excellent protector of either property or person, extremely beautiful, as well as sagacious, and fond of children and ladies, whom he quickly takes under his protection while travelling, as if to the manner born. He is very fond of the water, and will not only rescue human beings from drowning, but even dogs. He is, nevertheless, at times rather partial to fighting with canine companions of a large size, and this is his only fault.

The *Scotch Collie* may well be recommended as a companionable dog. He is the wisest or most sagacious of any we possess; the *Newfoundland* probably ranking second. He is a most beautiful animal, with intelligence beaming in his eyes, most loving and kind, and faithful unto death. It is quite a mistaken notion that the *Collie* dog is treacherous: This is one of those fallacies which seem to take so long a time to die a natural death. The fault with some *Collies*—we do not say all—lies in their over-sharpness and anxiety to please the owner. Therefore, they are apt to run barking at a horse, or anything passing, when first taken out in the morning. The *Collie* that does not have abundant exercise will not thrive well, so that the animal is better suited as a companion in the country than in town.

Setters, whether *Scotch*, *English*, or *Irish*, make very beautiful and affectionate companions, and, like the *Scotch Collie*, are quite fitted to be drawing-room dogs, although they really belong by right to the sportsman. The *Otter-hound*, if a really good one can be had, is a most gentlemanly fellow, and exceedingly sagacious and artful. He makes a capital companion, either outdoors or in. The old-fashioned, tail-less, rough *English Sheep-dog* is also a most picturesque but faithful fellow. The *Basset-hound* and *Dachshund* require only to be known to be loved. They are short-haired, and therefore make excellent indoor, carriage, or city dogs.

The *Deerhound* is the dog used for tracking red-deer in the Scottish Highlands. He grows to an immense size, is roughly beautiful, gentle, and affectionate. He is, perhaps, not over-sagacious; but follows well in the street, and looks very picturesque in a drawing-room.

The *Bloodhound*.—We only mention this dog in order to say that he is not by any means fierce by nature. Quite the reverse. Although he never fails to give notice of the approach of strangers, it is by baying and barking; and by day he would scarcely attempt to attack any one. Good dogs of this breed

are somewhat rare; but they are exceedingly beautiful and companionable. There is even an air of mediæval romance about their great wrinkled heads, drooping ears, and bloodshot eyes, that cannot fail to commend itself to many.

Pet Dogs.—By this term are generally signified those breeds of household dogs that seem only made to be loved and petted, and that are small enough to be easily carried in the street if occasion should demand it. They used to be called lap-dogs. When well bred, they are considered very valuable, and are expensive to purchase.

Probably the *Pug* is the most fashionable. He is an old-fashioned, kind-hearted, consequential little fellow, and not unlike in appearance a Mastiff in miniature. Without entering minutely into his points or qualifications, we may state that the colour should be a lightish or silvery fawn, the ears black and small, a black mask not extending above the eyes, with a dark trace down the back. The face is much wrinkled, and the eyes large. These dogs are not sagacious, but are very aristocratic in their manners.

The *King Charles Spaniel* and *Japanese Spaniel* are, as far as quality of coat, feathering, and shape of body go, simply Spaniels in miniature, with the exception of the head, which cannot be too short; there should be hardly an inch of nose. It is a well-known fact that these dogs are often martyrs to fashion, for unprincipled breeders flatten the nose of puppies. A puppy should never be bought that makes any noise in breathing. The eyes are very large and ears very long, and there is, or should be, no curl in the coat. The *King Charles* is black and tan; the *Japanese*, black and white. There is also a tricolour dog—black, white, and tan. The *Blenheim Spaniel* is much about the same shape in every way. The nose is usually somewhat longer. The colour is red and white. Now, in character all these dogs are very loving and gentle. Nor are they at all so delicate as their appearance would indicate. If not too fat, they are most gay and lively; and the *Blenheim* will even hunt the hedges for rabbits, and run for miles with a carriage.

The *Maltese Terrier* is a Terrier only in name. He is more of a tiny, long-haired Poodle. The hair is very long, but perfectly straight, pure white, and as fine as floss silk. It quite hides all the head, so that when asleep on a cushion the dog resembles a little bundle of cotton wadding or white floss silk. He is a very winning and winsome wee fellow.

The *Pomeranian* is generally white; but there are jet-black ones, usually much smaller than the white. In shape this dog resembles an Arctic fox. Either makes an excellent companion, outdoors or in; and

this dog is not nearly so helpless as the others we have named. He is even a good guard, although, of course, he is of no use for purposes of defence.

The *Poodle*.—The most fashionable nowadays is the black corded Poodle, the extraordinary appearance of whose coat must be seen to be believed in. Such excessive length of cord or curl, however, causes the dog to be a great trouble to his owner. A shorter-haired dog is better, and more companionable. But the Poodle is of all dogs the most tricky; in fact, he can be taught to perform canine wonders, and even to express his wishes by signs. Poodles, for some reason or another, are apt to be bad-tempered, though only with strangers. But we question if he stands the teasing of children as well as other breeds do.

The *Yorkshire Terrier* is a small, very long-coated, silky-haired, silver-grey and gold-tan dog, which is a very great favourite up North. Although altogether a lady's pet if bred for his length of coat, when shorter-haired he makes a very excellent little guard; and if anything be put in his charge, he will die to defend it. He is a charming little fellow, and requires a deal of affection, though not necessarily by fondling.

The *Italian Greyhound*, the last we need mention, is a wonderful little dog. In some respects he is really a fragile, fairy edition of his big brother the Greyhound. Fragile, however, though he undoubtedly is, he is far more hardy than might be imagined.

Management of Pet Dogs.—As the management of these tiny dogs just described differs in several essentials from that required by the larger breeds, we deem it best to give some hints concerning it in this place.

Food.—Let the breakfast be rather small, and the dinner as much as the little fellow will eat. But no tit-bits should be given between meals; and no sugar. These breeds are apt to lose the teeth at an early age, and get foul in the breath in consequence; and irregular or injudicious feeding favours the development of dyspepsia. A little bread and milk and meaty scraps will do for breakfast; boiled rice, with gravy, a little well-mashed greens, and some meat, will make a good dinner: this about five o'clock.

Plenty of *exercise* is essential to health. The bed at night is an important consideration in the case of the long-haired breeds, if we would maintain the coat. It should be a linen-lined basket without a cushion. They ought to be washed at least once a fortnight. A lather may be made with a new-laid egg, or some such soap as the "Pumilino" or Pears'—never anything harsher. The dog should be

gently combed and brushed every day. If any matting should occur, it must be carefully undone with a stocking-needle.

Buying a Dog.—There are so many dog-shows held nowadays that no one need be at a loss in procuring a well-bred puppy. Do not, however, buy at a show, but get a prize catalogue from any secretary after an exhibition is over. From this catalogue you can obtain the addresses of the best breeders, and so communicate with them. Or an advertisement may be put in one of the special journals devoted to such matters. Be sure to have the dog on approval, and submit it to an experienced veterinary surgeon for inspection before buying. Never trust the advertisements you find in the lower-classed papers. They are too often a snare and a delusion. The best age at which to purchase a puppy is from six weeks to three months old; it can then be had somewhat more cheaply, and can be trained according to the owner's fancy.

Treatment of the Puppy.—It should be remembered that a puppy requires feeding very frequently indeed. When it leaves the dam, it should be fed five or six times a day—first thing in the morning, and last at night. At this early age milk thickened with boiled flour or Indian meal is best. But do not always keep it on the same sort of flour, or diarrhoea may be induced, which would be difficult to manage. After a week or so, boiled Spratt-cake may be mixed with the milk, and so, as the food can be eaten thicker, the times of feeding are made less frequent; at three months old, feed four times a day; at five months, three times, giving a little milk now and then if the puppy is thirsty. The critical period is the teething time; a little meat will be wanted then, and extra care in housing. But at all times, if the puppy is to thrive, he must have plenty of exercise; if possible, a companion to play with, large bones and old boots as toys to gnaw and worry at, plenty of sunshine, and unlimited bedding to bury himself in if he chooses. If the pup yelps at night, it cannot be all right. It is a good plan always to feed at bedtime. This will usually secure a quiet night both to the puppy and his owner. If he is to be an indoor dog, he cannot be too early trained to habits of cleanliness; but no harsh means must be adopted. If the owner loses his temper and beats the puppy, he is guilty of a useless act of cruelty. Never handle a puppy much, nor lift it by the legs; and put no restraint of any sort upon it, such as a chain, which would only tend to make it bandy-legged, and in every way out of joint. A puppy should be kept very clean, and washed about once a fortnight. In conclusion,

success in rearing a puppy depends entirely on one's capability of making it thoroughly happy.

The Outdoor Dog-kennel.—If a dog is worth keeping at all, he is worth keeping well; the kennel, therefore, should be a good substantial one, with the door so placed that draughts will not blow in upon the animal, raised a little from the ground, and entirely free from leakage. In very stormy nights in winter the dog should be taken indoors entirely, or shut up in a warm outhouse with plenty of straw. The collar should be a leather, not a metal one, as this is apt to slip. The chain should have a couple of swivels to it, so that it may not get into a knot. The water-dish is part of the outdoor kennel furniture; it ought to be of metal, with a good broad bottom. There should be a bench raised some height above the ground for the dog to lie upon, and in summer, if possible, an awning; this last often prevents much suffering. But in no case should a dog be kept all day and night on chain. If there is one thing more important than another about the kennel, it is that it should be kept scrupulously clean. It should be periodically scoured with some disinfectant soap, the dog not being allowed to enter it until it is thoroughly dry. The same rule holds good as to the water-dish, and to the dish from which the food is eaten, and everything connected with the animal, even to the inside of the collar he wears, which often becomes foul and unsavoury. There can be no real health where there is no cleanliness, whether the dog be kept indoors or out of doors in a kennel.

The Chain and Muzzle.—Never permit a dog to wear either a minute longer than is absolutely necessary. The law at times compels one to muzzle a dog on the street; the muzzle, however, need not be a thing of torture, but one that neither prevents him from breathing easy nor lapping water.

Dogs Indoors.—The house-dog is often in danger of being killed by kindness. He gets fed irregularly, and is treated to all sorts of dainties. He does not, as a rule, get sufficient exercise, and by-and-by perhaps becomes too fat to take enough. In a case of this sort indigestion is sure to take place, and after a time disease of some important organ—liver, heart, or kidney. Indoor dogs should have a pannikin of water placed handy for them, always in the same place. A piece of brimstone in it is no good at all, though a little sulphur or gunpowder in the food now and then does good, and helps to keep the blood sweet and pure.

Grooming the Dog.—Nothing more is necessary for this operation than a wide-toothed comb and

an ordinary dandy-brush, or hair-brush; but the operation, if performed every morning regularly, tends greatly to the health of the dog, and keeps his coat in excellent condition and glossy. Grooming, too, if well done, prevents fleas from annoying the animal.

Washing the Dog.—When a dog is to be washed, everything must be placed handy before a commencement is made. Plenty of water (hot and cold), soap, a cup to lift the water with, and the towels. Tie the dog up near the bucket or tub. See that the water is not too hot; then take the soap in the left hand and the cup in the right, and begin at the neck. Rub the soap in while the water is poured over the fingers. Work along the spine, making a plentiful lather down both sides, down each leg, and along to the very tip of the tail. Leave the head till the last. Do not let the soap get into the ears. Wash out the lather now, and next douche down with the cold water. After he has shaken himself several times, dry down well with the towels. He must at once after this be taken for a good run in the sun—a fine day having been chosen for the operation—and on his return he should be allowed some food, then be sent to his kennel. Dogs should not be washed more than once a fortnight, and the soap should be the mildest that can be bought. A swim in the water every day when the weather is fine does good, and keeps the animal in health.

Exercise.—No dog that does not get abundant exercise can be well. He goes wrong in every way; his stomach suffers, his skin suffers, and so does his temper. The more exercise he has, the better; but two hours of running and romping are none too much during the day.

Bedding.—This should be most abundant, and always dry and clean. Good wheaten straw is probably the best, but pine shavings may be substituted. Oaten straw is fairly good, but does not last so well. Hay should not be used. The clean bedding should never be put on top of the wet or soiled straw.

Food.—Some people think anything is good enough for a dog, but this is a great mistake, and bad food breeds much disorder. As regards the feeding, we have to remember three words; these are *cleanliness, regularity, variety*. The food should be clean and sweet; anything left over from the previous meal should be discarded. The dish ought to be pure, and no stale garbage of any kind should be either cooked for or given to the dog. He should be fed with regularity—say, breakfast about eight in

the morning, and dinner at five p.m. Variety in food is essential to perfect health, and there is plenty of this to ring the changes on. We have, first and foremost, in Spratt cakes a very handy staple of diet. For house-dogs they are best steeped for a night, then well broken up in the dish before the relish is added. As a change, we may give oatmeal porridge one day, and boiled rice the next, or well-boiled barley-meal, &c. &c. The relish is the broth and meat. In every house where a dog is kept, there should be a dog's saucepan. In this are boiled meaty scraps from the butcher's, bullock's lights, perhaps now and then a sheep's head, and occasionally a morsel of bullock's liver. This latter, however, should be used but sparingly, as it opens the system too much. We take advantage of this, and give the dog a piece of liver when constipated. Horse-flesh is also good; so is fish. So much for meat; but a dog will not thrive well that does not have some well-mashed green vegetables in his food about thrice a week.

A dog should have just enough to eat, and no more. His dish ought to be licked out, else it is a sign he is not over-hungry. As to bones, one now and then does good, but it must be large—something he can gnaw at. On no account should he have either game, or fowl, or fish bones.

Clean water, and plenty of it, should be placed within reach of the outdoor as well as the indoor dog, and it should always be the purest and best that can be obtained. Dainties should be forbidden, and servants should never be permitted to throw pieces to the dog, or to feed him except at his own meal-times. The feeding, however, should be supervised by either the master or mistress of the house, and not left to the caprice of a servant.

Ailments of Dogs.—Attention to the rules of health, regular feeding, fresh air, cleanliness, exercise, good bedding, pure water, and nutritious diet, will, as a rule, keep sickness at bay. Yet, do the best we can, the dog gets ill sometimes. The most ordinary signs of his being out of sorts are want of appetite, quietness, or a desire on the dog's part to remain undisturbed, his lying in dark or out-of-the-way corners, pain when moved about, dry hot nose, heat on the inside of the thigh, a harsh or staring coat, and an injected eye. Any one or two of these signs, especially the first, should lead us to the conclusion that the dog is ill, or going to be. If it is possible and convenient, by all means send for a properly-qualified "vet." A stitch in time saves nine, and a dose or two of medicine may set the animal to rights again, although his diet must be reduced for a day or two to come, and he must be treated in every way like an invalid. There is a

possibility that it has been a false alarm after all; well, tho "vet." would have given medicine, and this always upsets a dog more or less for some time afterwards, so he should be taken care of. If no skilful "vet." is to be had, take the dog in hand at once, consider the case, and make up the medicine. One is always pretty safe to begin the treatment with a dose of castor-oil and syrup of buckthorn, suited to the animal's weight. The mixture is composed of two of oil to one of syrup, and the dose is from a dessertspoonful for a toy to two ounces for a large mastiff. It is a simple but invaluable medicine. It should not be kept ready made up, however, or it will spoil.

Remember that, in sickness, careful nursing and judicious diet are half the battle. But never force food or stimulants down a dog's throat when feverish or very low. This only hastens the end. Whatever medicine is prescribed should be given regularly. A medicine chest—small ones can be had—should be in every house for the benefit of the dog and cat. It is better to trust to such a little box, with its marked bottles and directions, than to go haphazard at prescribing oneself. Do not, however, give *quack* medicines of any kind. If you buy dog medicines therefore, purchase from a firm of respectability. Cleanliness of all a sick dog's surroundings, *warmth*, fresh air without *draughts*, and pure *water* frequently given, are most essential to his chance of recovery. If the dog is going on well without much medicine, leave well alone. Never give a dangerous medicine without good advice, such as chloral, strychnine, mercury, or arsenic.

To give a dog medicine, say a pill, roll the ball in tissue-paper, wet it, then seize the dog gently but firmly with the left hand by the upper jaw, holding it so that the gums go over the teeth. The pill is then to be put as far back as possible—right down the throat, in fact—with the forefingers of the right hand. Powders may be slipped between bits of raw meat. In giving fluids, they are either spooned over the throat, or the mouth is held close, and the lips at one side made a funnel of; but one spoonful must be swallowed before another is administered.

Distemper.—This is the bane of our kennels, and the disease that dog quacks mostly fatten on. The house-dog should never have it; if care is taken about his feeding from the fourth to the seventh month, he will escape. Many cases of so-called distemper are simply common colds. Distemper begins, like a cold, with suffused eyes, running of water from the nose (soon becoming mattery), fever, a husky cough, &c. But soon inflammation of lungs, and perhaps terrible diarrhoea, sets in, and the animal becomes a mere bag of bones. Get a "vet.," and trust to him. Nursing and careful dieting often do more good

than medicine. Try no harsh remedies. We can only guide a dog through this terrible illness; we cannot cut short the malady. A little fever mixture, containing spirits of ether and antimonial wine, or chlorate and nitrate of potash, a dose of castor-oil, with a few drops of laudanum in it, to begin with; this in conjunction with low diet. A cough mixture or diarrhoea mixture to follow; arrowroot, eggs, and beef-tea, a little port-wine or brandy-and-water as the dog gets weaker, a warm room, quiet, kindness, and a good bed. This, and this alone, is the rational treatment.

Inflammation of the Bowels.—This may follow distemper. The dog seeks a dark corner. He evinces great pain, especially if touched in the stomach; the back is arched, the face pinched, and the tail carried under the body. There is high fever. Get a "vet." at once. Keep the dog very quiet, and give water to drink; also large doses of laudanum to relieve the pain.

Colic.—This is often mistaken for inflammation, or *vice versa*, but there is the absence of fever; and though the dog eries out and starts up, as if to run away from the pain, there is no tenderness, pressure even giving relief. A dose of castor-oil and laudanum should be followed by a dose of chlorodyne, which may be repeated after a time; hot brandy and water.

Constipation.—Many dogs suffer from this. Medicine relieves, but cannot cure it. Alter the whole plan of the dog's life. Give plenty of exercise; wash once a week; douche the body of an outdoor dog, in good weather only, with water; let him have a swim daily; plenty of greens in the feed, and occasionally liver. A tonic pill to complete the cure.

Diarrhoea.—This is the opposite condition of the system. If only slight, a dose of castor-oil with laudanum, followed by the ordinary chalk mixture of the shops, will cure it. But the diet must be lowered, and no meat given for a few days. Chlorodyne is a most effective remedy. It may be dropped on raw arrowroot, and so made into a ball. Give two to four doses. If the trouble gets worse, call in a "vet."

Cold or Catarrh.—This is not in itself dangerous, but is apt to run on to bronchitis, so it should be taken in time; besides, it may be incipient distemper. There is less of appetite; the dog seems all out of sorts, and may or may not shiver. (Pet dogs, by the way, often shiver with a view to enlist sympathy.) If there be fever as well, better call in a "vet.;" if not, lower the diet, give a little *Mindererus'* spirit at night, and a cough mixture by day, containing paregoric and squills. Bathe the muzzle and forehead frequently with hot water, and give a dose of castor-oil.

Bronchitis, Pleurisy, and Inflammation of the Lungs, are all far too dangerous ailments for the owner to treat without skilled advice. So, indeed, are inflammations of any kind. Therefore, whenever the skin heat is very high, with the dog apparently ill, the nose hot, and eye injected, a "vet." should at once be called in; or, failing this, consult a friendly doctor.

Paralysis.—This is a trouble that many growing puppies of the larger breeds are subject to. The hind-quarters are dragged, or the little animal is unable to move at all. Lower the diet in quantity, but let it be extra nutritious; give a dose or two of the oil and buckthorn mixture, to secure good action of the bowels. This may be repeated in a day or two. Meanwhile cut the hair from the back across the loins, and rub twice or thrice daily with a strong ammonia liniment containing a little turps. An alterative, containing iodide of potash and belladonna, may be given. If this treatment does not succeed, we fear it is a bad case, and the dog will not live.

Fits.—Keep the animal as quiet as possible when in the fit, and afterwards attend to his health. Some loose teeth may want seeing to, or the dog may have worms. Try for worms, at all events; the purifying will be beneficial rather than otherwise. Put on light nutritious diet. Do not excite him in any way, nor let him run in the sun. Give repeated doses of compound rhubarb pill, to regulate the bowels and secretions; and get an alterative pill, containing zinc and hyoseyanus, from the chemist, which continue to give for weeks. Any properly-qualified chemist should know about the dose to give to a dog, and of course it will be according to the weight and age of the animal.

Tape-worm and Round Worm.—All canine medicine chests contain remedies for worms, and they can be safely trusted. Only give strictly in accordance with the directions laid down, and repeat the treatment once again after four or five days, unless the dog has diarrhoea. It is a good plan to try a young dog for worms in spring-time, if he be at all out of sorts. Emaciation is one of the symptoms, and a bad one too; capricious appetite is another, while toy dogs generally have an offensive breath.

Canker of the Ear.—This is known by the dog shaking his head a deal to the ailing side. If the ear be examined, it will be found to have a slight dark discharge, and to smell badly. The remedies "vets." use are generally too harsh to begin with. Warm green tea, made a little stronger than one would drink it, is a good lotion; a little is simply poured in, and held there for about a minute. Five grains of sulphate of zinc, or alum, to an ounce of water is another good remedy. If this fails, nitrate

of silver, two grains to the ounce, should be tried. But the dog's health must be properly attended to. Give well-mashed greens almost every day in the food; keep the bowels gently open, and give an alterative medicine, which will be found in the medicine box.

External Parasites.—Fleas may be destroyed by the insect powder, but the coat must be afterwards washed and kept clean. For lice, soak the coat in oil, keep warm all night, and wash next morning.

Out of Condition.—Feed better; give an alterative medicine in conjunction with cod-liver oil. A dose of castor-oil once a week, and after a time a tonic. Do not attempt to hurry a cure. If there be any cough, call in a "vet."

The Household Cat.—The popular fallacy that cats ought to be allowed to forage for their own food, and that regular feeding is unnecessary, has wrought much evil to the feline race in this country. And this evil returns upon the owners, and, worse still, injures the owners' neighbours. For badly-cared-for cats are invariably thieves and midnight prowlers. It is they that rob pigeon-lofts and rabbitries, and spoil flower-beds, and, in fact, do all the mischief which brings cats so much into disrepute. Property hath its duties, even if it consists only in the possession of a cat. But, independent of this, it really repays one to be ordinarily attentive to the wants of puss. Well fed and cared for, she is contented and happy; badly looked after and starved, she becomes a very disreputable member of the household indeed. She needs so little, too; if we only get in the habit of feeding her regularly twice a day, she wants but little else. She will attend to her own toilet, and be both cleanly and honest.

Food and Drink for a Cat.—Few, even of those who would not willingly starve a cat, know how much she will eat when in good health, and so the supply put down for her is usually rather small. If a cat is well, and is not in the habit of picking up garbage out of doors, or foraging for herself in cupboards and in the kitchen, she will eat a hearty meal in the parlour. She ought to have at least two good meals a day, and a little tasty supper besides. This last is most important from one point of view. If we make a habit of always giving puss this last meal, she will look for it as her right, and therefore come in at night to eat it. She can then be kept in the house. Bread soaked in milk, or, better still, oatmeal-porridge and milk, is as good a breakfast as a cat can have. But, in addition to this, she may get any tit-bit there is to spare from the table. Be careful that the porridge and milk are not too hot, for cats cannot take anything hot with comfort. At

dinner-time she ought to have a good plateful of whatever is on the table—say, potatoes and a little greens nicely mashed with gravy, and a good allowance of meat or fish. Some people give their cats eggs; a very good thing, too, if they can afford it. However, meat a cat must have, and perhaps there is nothing better than boiled bullock's lights, or the horse-flesh sold in towns.

Cats are not so fond of milk as is generally believed; at the same time, it is good for them, and they ought to have an allowance daily. Fish they are extremely partial to, and that also should be provided. There should be some little variety in the diet, if health is to be maintained. *Grass* is essential to a cat's well-being. If the cat's-meat man could also manage to vend nice bunches of cool green grass, town cats would thrive very much better. Well, where it cannot be gathered, the grass should be grown in flower-pots. As regards *drink*, milk, it should be remembered, hardly quenches the thirst, so that in every case the cat should have free access to a supply of pure water.

Cleanliness.—A cat is a most cleanly animal, and it is not difficult to attend to her requirements in this respect. She should have clean food, and the dish should be always rinsed out and kept sweet. The cat keeps her own coat tidy by means of her tongue; but in this also she may be assisted by giving her a morsel of fresh butter, or smearing it over the paws. Cream will do equally well. Long-haired cats should be brushed and combed every day. The very busiest of mistresses can find time for this little operation, and it may really be the means of preventing serious or fatal illness. Long-haired cats moult or shed their fur, especially in spring-time, and are apt then to swallow quantities of hair, which may form a ball in the stomach, and kill the animal. There is only one way of preventing this—namely, by grooming daily.

Housing.—This is another matter of no small importance to pussy's health. A great many people make a practice of turning the cat out of doors at night. Such as these ought not to possess a cat. The practice is most objectionable; it is unfair to one's neighbours, and most unfair to the cat. No doubt it is often done lest she may forget herself in the house. However, it is a fact that cats are far more easily trained to *habits of cleanliness* than dogs are. All that is necessary is to place a box of clean dry earth in a handy corner; the kitten is sure to find it out, and when she is a little older she will seek for earth out of doors. But teaching a cat to use the coal-box is not a practice to be commended; from the coal-box to the cellar floor is an easy transition,

and the cat becomes dirty in her habits. A cat should not be confined to one room. She cannot stand the idea of being made a prisoner. Only let her be indoors at night; she will then run no risk of being poisoned, or of contracting mange, or many other ailments.

Different Kinds of Cats.—Of late years, and since cat-shows have become an institution in the country, the long-haired breeds have become great favourites. These are of any or all colours and markings, and are generally called Asiatic cats, being distinguished by the names "Persian" and "Angora." There is really very little difference, only the latter name is given to those that have a superabundance of very soft long fur; while that of the Persian should be somewhat stronger and straighter, but still very fine, and like floss-silk. The head of these cats should be a small one, and somewhat pointed, though not necessarily long; the ears short and carried forward, with a long tuft of hair in each; the body should be long and very graceful, with the hind legs large and strong. They are in constitution more delicate than our old-fashioned short-haired cats, and scarcely such good mousers. But they are gentle in disposition as a rule, and fond of making playmates of other animals, such as dogs, pet rabbits, guinea-pigs, &c. They require a little more care; but this is well repaid by their beauty and affection.

Cruelty to Cats.—There are many species of cruelty perpetrated on cats that are unmentionable, but one may be cruel to cats without meaning to be: by turning her out at night, for example; by permitting more kittens to live than one can find good homes for; by killing all the kittens at once; by neglecting to feed regularly; by "wandering" a kitten, as it is called—than this it would be better far to drown it; by going from home, and shutting a cat up in the house to shift for herself. This is the worst form of cruelty, and should never be done. One can usually find a neighbour to feed puss during her owner's holiday. If not, why should she not be taken with the family? Cats make very excellent travellers. But, at all events, better she should be lost out of doors than shut up to die of starvation.

Fallacies about Cats.—Dr. Gordon Stables, R.N., in his book on "Cats and Cat Life," says he has been at no small pains to prove the inaccuracy of a great many popularly-received ideas about cats; and from the thousands of anecdotes and even biographies of cats, all authenticated, he comes to the following conclusions, which, doubtless, many owners

of well-used cats will readily believe are correct:—

(1) That cats are extremely sagacious; (2) cleanly and regular in habits, when properly trained; (3) fond of children; (4) excellent mothers, and will nurse the young of other small animals on loss of their own progeny, such as puppies, rabbits, or guinea-pigs—they have even been known to suckle young rats; (5) fond of roaming abroad; (6) brave to a fault; (7) fond of other animals as playmates; (8) easily taught many tricks; (9) excellent hunters of vermin; (10) good fishers, and can swim on occasion; (11) very tenacious of life; (12) fond of home; (13) but fonder far of a kind master or mistress; (14) *not*, as a rule, thieves, if properly tended, but quite the reverse; (15) that long-headed, short-nosed cats are the best mousers.

Getting Rid of Cats and Kittens.—The ordinary way is to drown them. This is rather cruel, especially to an old cat, which often makes a terrible struggle for life. If kittens are to be drowned, they should be taken away from the mother as soon as born, and quite immersed in a pail of lukewarm water—never left to float and struggle about. But a more humane plan is to put them into a small box with a sponge over which about half an ounce of chloroform has been poured, and covered with a little wire-work. The box-lid is then closed, and the kittens will soon be dead. Syrup of chloral, about two teaspoonfuls in water, will put an old cat asleep, and she may then be chloroformed.

Ailments of Cats.—Grass we have already mentioned. In large doses it acts as an emetic, in smaller as a purgative; and it also possesses valuable antiscorbutic properties. It is a necessity, therefore, both in health and in sickness. A *sick cat* should be as carefully nursed and tended as an ailing dog, and, as a rule, makes quite as good a patient. If suffering from, say, that very common complaint in cats, *Bronchitis*, it is best to put her in some clean garret or lumber-room, placing in the room a bed for her, a good supply of clean water, a saucer of milk, and a box of dry garden-earth. Medicine is given to a cat pretty much in the same way as to a dog; but puss should be rolled in a shawl, and held in the lap of an assistant. It should be remembered that if a cat is in pain, struggling with her to give medicine often does much more harm than good. In giving cats medicine, too, we have to be very careful not to soil the fur, especially with any oily substance.

A very common ailment among cats is *Diarrhœa*, more particularly among those that are badly treated or utterly neglected. It is generally caused by something the cat has eaten, or by exposure to cold and

wet; and if not seen to, is apt to go on to dysentery, and a wretched death. Give, first, a teaspoonful of warm castor-oil, with about three to five drops of laudanum, and repeat this dose next day if there be no improvement. At the same time, give the ordinary chalk mixture of the shops, a teaspoonful for a dose, frequently repeated. Add a little solution of lime to the milk she has. Give no meat; only bread and milk, custard, egg, and a little fish. Keep her quiet. Afterwards, if much reduced in flesh and weak, give a quarter of a grain of quinine in bread-crumbs three times a day. If the illness runs on to *Dysentery*, or super-purgation, it would be well to give the cat chloroform, although patience and gentle nursing might bring her round. She must have the quinine continued, and about every second night a grain of calomel put on the tongue, and the most generous of diet—eggs, custard, a tiny morsel of raw meat—and a little port wine or brandy-and-water now and then.

Cats are subject to a subacute inflammation of the stomach, or it may be chronic. The animal pines, refuses food, or, if she does eat, suffers afterwards, and is probably sick. The bowels are also out of order, and the body emaciated. We give in such a case chalk; if there be much diarrhœa, an occasional small dose of castor-oil, and place on the tongue thrice daily about three grains of the trinitrite of bismuth; on every second night a grain of calomel, with two of rhubarb-powder. A little raw meat may be needed, eggs, and cod-liver oil.

Common Colds in cats are very likely to run on to bronchitis, when there is evident pain and distress, difficult breathing, with a mucous cough, and sometimes rapid emaciation. Puss must then be kept in a warm room, and for a time have no meat, only warm milk and sugar. We may succeed in staving off the inflammation in this way, especially if the bowels are opened with a grain or two of calomel, followed next day by castor-oil. A good cough-pill may be made thus:—℞ Ext. Conii, Pil. scillæ co. āā grs. xv.; camph. grs. xx.; mix. To make twenty-four pills. Dose: one night and morning, or thrice a day. Support the system in the usual way when weakness appears.

Cats have a trouble which we call jaundice or the yellows. There is loss of appetite, fever, emaciation, and vomiting of bilious matter. It must be taken in hand at once, or may prove speedily fatal. Three grains of calomel placed on the tongue, and followed next day by a small teaspoonful of Glauber salts, often acts like a charm. One grain of calomel may be put on the tongue every second night after this, and during the day small doses of trinitrite of bismuth given. Support the system as soon as debility appears.

The so-called *fits* that cats suffer from are of two or three different kinds. There is no occasion for needless alarm. Nothing can be done at the time except to confine her, and keep her as quiet as possible. The after-treatment consists first in giving about the same quantity of dog worm-powder as would be given to a toy terrier, and in the usual way. Afterwards keep the cat in at night; give occasional doses of castor-oil, and for a week one grain of iodide of potassium to two of the bromide morning and evening. Cod-liver oil will complete the cure.

As regards *worms*, about two grains of santonine should be given on an empty stomach whenever the *long worms* are vomited. Omit for one day, and repeat the dose, and so on for four doses. Tape-worm is treated with the ordinary dog-worm powders.

Cats often ail from swallowing fur. Nature will gradually effect a cure, but this may be assisted by giving castor-oil; and afterwards three grains of the trinitrite of bismuth thrice daily, to allay the irritation of the stomach. Repeat the oil after the fourth day. Give raw meat, minced, to keep up the

strength; this is important. In some cases a vomit will do good; about three or four grains of sulphate of zinc dissolved in warm water should cause vomiting, or even a little salt and water.

When a cat's eye or eyes are inflamed, for the first day or two bathing frequently with milk and water will do good, while at the same time Glauber salts ought to be administered. After the inflammation is subdued, an eye-lotion containing zinc and the liquid extract of opium will complete the cure.

Cases of *ulceration* about the feet, or face, or ears, are treated by keeping the parts very clean, and dressing with the benzoated oxide of zinc ointment. The ulcers may also be touched or daubed with vaseline, then dressed with the ointment. Sometimes sulphur ointment will be found best, especially if the sores are at all of a mangy nature. As to *mange* itself, which includes eczema—sometimes in a very bad form—there is often hardly any hopes of a cure. At all events, it would take weeks, or even months, of careful nursing and constant dressing to cure mange. So we advise in such cases that the cat be mercifully put out of her misery.

HOUSEHOLD ODDS AND ENDS.

UNDER this heading we collect together for convenient reference a number of notes on small repairs and other matters which are constantly occurring in a household, and which are more conveniently dealt with thus than in numerous small scattered paragraphs.

Amber, to mend.—Ornaments made of this material may be successfully repaired by dissolving amber in chloroform and using it as a cement. See that the broken pieces are free from grease, and warm them slightly before mending.

Aromatic Vinegar, to make.—Steep half an ounce each of sage, rue, rosemary, lavender, and cassia, one bruised clove, and one ounce of powdered camphor in a quart of strong vinegar. Leave it a week, strain, and it will be ready for use.

Books, to repair.—When books have come out of their covers, they may be made to look like new in the following manner:—Take the old lining off the back by sponging it with a warm damp sponge, and remove as much as possible of the old glue. Cut a piece of plain white or coloured paper large enough to fit over the back of the book, and to make, as it were, an extra page at each end. Pasto this down

the middle and fasten it to the back of the book. Rub some thin glue over the back, and leave it to dry. Get some soft calico or muslin, cut it as long as the book and about two inches broader. Glue this down the back, and see that it is exactly in the middle. Leave it to dry; then get the cover, and remove any ragged scraps of old paper that may be left in it. Place the book in it in the proper way, and paste the muslin and the two sheets of paper on the inside of each cover. Smooth and press them down well, put the book under a heavy weight, and leave till dry.

Carpets, to clean.—After the carpets have been thoroughly beaten and re-laid, scrub them with soap and water, to which ox-gall, in the proportion of one pint of gall to four gallons of water, has been added. Use the brush damp, but not wet; then dry with a soft clean cloth.

Cements.—*For cisterns and water-pipes.*—Mix equal parts of red and white lead into a thin paste with boiled linseed oil. This hardens very slowly, but the fracture should be thoroughly coated with it. For use under water, boil together eight ounces of glue and one ounce of Venico turpentine. Stir the mixture constantly, and use while hot.

For china and glass.—A simple cement is made by mixing powdered glass with white of egg to the consistency of thick cream. Powdered chalk, egg-shell, or quick-limo made with hot water, may be used instead of the powdered glass. A very strong cement for large articles is made of white of egg, white lead, and glue melted together. An excellent cement, known as "Diamond" cement, consists of one ounce of gum mastic dissolved in spirits of wine, mixed with isinglass melted in brandy, and a quarter of an ounce of finely-ground gum ammoniac. By using the isinglass and spirits of wine alone, a transparent glue is obtained which is useful for mending glass. Another and similar cement may be made of one part of India-rubber dissolved in chloroform and added to sixteen parts of gum mastic in spirits. Leave for two or three days, shaking frequently.

For India-rubber.—Use one part of caoutchouc cut into chips and dissolved in three parts of naphtha; this can be obtained at India-rubber shops under the name of India-rubber solution.

For India-rubber and wood.—Dissolve powdered shellac in ten times its weight of the strongest liquid ammonia, keep it for a month, when the cement will have become more liquid. It then has the power of softening India-rubber and thereby causes it to adhere firmly to wood or metal. The cement hardens after it has been exposed for some time to the air.

For leather.—Melt together four ounces of gutta-percha, half an ounce of pitch, one ounce of India-rubber, a quarter of an ounce of shellac, and half an ounce of oil. Use while hot.

For marble.—Melt equal parts of white resin and white beeswax, and thicken with calcined magnesia, fine wood-ashes, or plaster of Paris.

For metals.—Mix plaster of Paris to the thickness of cream with glue, and add fine iron filings in the proportion of one-fifth of the entire weight.

For wood.—Mix sawdust or cocoa-nut filings into a paste with glue. For mahogany, melt four parts of shellac or beeswax with one of Indian red, and add yellow ochre till the required tint is obtained. Another firm glue may be made by dissolving Russian isinglass in strong acetic acid. Wood may be firmly united to metal by a cement made of equal parts of Portland cement and fine silver sand. Mix these to a paste with white of egg and half a teaspoonful of vinegar diluted with two-thirds their bulk in water. Paint the breakage with white of egg, then with the paste, and finally fill all crevices and cracks with the white of egg alone. Place the article, if possible, under heavy pressure till dry.

It should be borne in mind that the thinner the film of cement between two surfaces, the closer will

they stick; also that no material can be successfully mended unless both sides are perfectly dry, and in many cases warm, before the glue is applied.

China, to rivet.—To rivet china is by no means such a difficult matter as appears at first sight, provided that common-sense and the power of neat workmanship are possessed. The implements required are shown in the illustrations, and may be had at most tool-shops. Fig. 1 represents the drill, which is very simple in construction. It consists of a steel rod fourteen inches long, having at one end a knob with a small round hole through it. Through this passes a piece of catgut, the ends being knotted through holes at each end of a turned handle of wood, in the middle of which is a hole through which the steel rod can be moved freely up and down. A turned piece of metal or heavy wood is fixed on the centre rod about a quarter of the way up the rod. By working the handle up and down, the catgut twists and untwists, rotating the drill-stock in alternately contrary directions. Fig. 2 shows the drill-bit on a larger scale. This is a tapering piece of tin with a diamond point attached to the tip, and fits firmly on to the pointed end of the drill. The brass wire, a section of which is shown at A in Fig. 4, must be flattened on one side. This may easily be done by drawing the wire briskly several times beneath the blade of an old knife.

The following instructions for riveting a plate are taken from an article in *Work*.

"Suppose we have a plate, as in the illustration (Fig. 3), with a piece broken out, and cracked also; join the plate, and turn bottom upwards, as we shall rivet the wrong side, so that it

may not show when hung on the wall, or when in use. Now mark, with a steel point dipped in oil, on both sides of the break and crack where the rivets

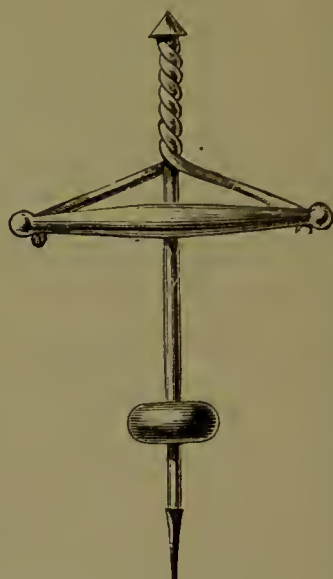


Fig. 1.—THE DRILL.



Fig. 2.—THE DRILL-BIT.

are to go. I may say the old oil off an oilstone, or hone, is the very best thing to mark with, as it makes a black spot, which is easily seen. Be careful to



Fig. 3.—PLATE DRILLED FOR RIVETING.

make the rivet-holes exactly opposite each other. Now take the drill, to which you have fastened an appropriate - sized bit (for a small plate you will, of course, use a small gauge of wire, and small bit; for a larger plate, thicker wire, and proportionate - sized bit); take one of the pieces of the plate, and

having broken the glaze, either with the diamond or a steel drill set in a handle and sharpened on a hone, grasp the wood handle of the drill with the thumb and first finger on the left side of the steel rod, and the second and third fingers on the other side; twist the catgut round the rod, and then press slightly, when it will uncoil, and, by raising the hand at the proper moment, coil in the opposite direction. It will, perhaps, not be easy at first to get a continuous motion, but it will soon come. Drill as deep as the article will allow, using plenty of oil. Having drilled all the holes in one piece, proceed in the same way with the other; then take some of the prepared wire, and turn down at right angles with the nippers one end about $\frac{1}{16}$ inch or $\frac{1}{8}$ inch, according to the depth of your holes, keeping the flat side of the wire underneath; place this in one hole, and carefully mark where the bend ought to come; cut off, and turn down the other end (See Fig. 4.) When you have finished all the rivets, proceed to fix, when, if properly made, they ought to fit tightly; in fact, it will be all the better if they require a slight tap with a small hammer, but see to it that none of the ends are so long as to prevent the rivets lying flat on the plate.

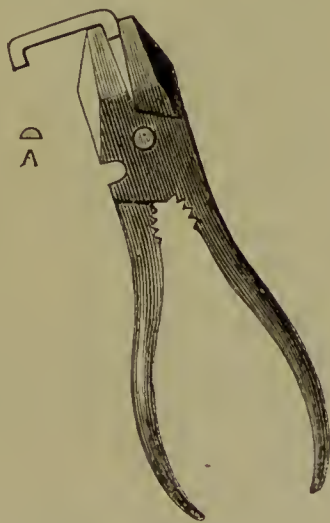


Fig. 4.—SHAPING THE RIVET.

“Mix a little plaster of Paris with water, and fill up all the holes, and also the cracks if there be any.”

When these implements are not obtainable, china may be riveted in a more rough-and-ready fashion thus:—Take a well-tempered triangular file, choosing one that has a very sharp point. Mark the place on the china where the hole is required, and gradually tap and pick with the file till a tiny hole is made, no larger than a pin's head. Keep the file oiled during this operation, and enlarge the hole to the size required. The rivets are put in as above described.

Combs, to clean.—Cut a piece of card the width and length of the comb, and pass it in and out between the teeth till all dust is removed; then rub with a flannel, and polish well. Or, wind cotton between the thumb and little finger of the right hand while the fingers are fully outstretched, and rub this up and down between the teeth of the comb. Yet another way is to brush the dust out with a soft old brush, and to polish the comb well with a piece of linen rag. It is always advisable to clean combs without using water for them, as they are apt to become brittle in drying.

Corks, to render Air-tight.—Dip them in a mixture of one part of beef-suet and two parts of white wax, melted together. Set them to dry near a fire, then repeat the operation twice or three times more. When bottles have been corked in the ordinary way, dip the heads into this mixture:—Half a pound of coarse red sealing-wax, a quarter of an ounce of beeswax, and half a pound of black resin, melted down, and stirred with a common tallow candle to prevent them from burning. Instead of this, the corks may be coated with gelatine dissolved in glycerine by gentle heat.

Crape, to renovate.—Brush all dust out first with a soft brush, then hold the crape out taut over a wide-mouthed vessel half full of boiling water. Crape that has been exposed to rain will spoil less if pinned out straight till dry, than if allowed to hang loose and limp. Crape that has become brown by use may be freshened by being dipped into water, to which a little blue has been added. A lump of sugar should be dissolved in the water to act as starch. Pin the material out flat till dry.

Decanters, to clean.—Soak the decanters in warm soap and water, brush the outsides with a soft brush if there is any cut work about them. Cut a raw potato into small square pieces, put a handful of these into the decanter with some water, and shake them about till the stains seem to have disappeared; then rinse in cold clear water, and drain

the decanter by balancing it upside down in a jug. Powdered egg-shell, small lumps of charcoal, or shot, will answer as well as the potato. Soft paper torn up into small pieces, and tea-leaves, are also good materials for cleaning glass bottles the shape of which does not allow of the use of a mop. Water-bottles that have had hard water stood in them for some time may be cleaned by adding a teaspoonful of spirits of salts to the water in which they are washed. The bottles must be thoroughly rinsed in clean water, left to drain, then wiped dry with a cloth free from grease, and finally polished with a leather.

Dishes, to mend.—If the dish is only cracked, it may be preserved from falling to pieces by painting the crack on the underside with white paint. Cut a piece of tape the length of the crack, cover one side with paint, and lay it over the fracture. Press the tape down till perfectly smooth. Set the dish aside for two or three weeks, when the crack will be perfectly firm.

Eggs, to preserve.—Paint them over with gum, and keep them embedded in dry powdered charcoal. Place the box in a moderate and even temperature in a dry room. The gum may be washed off with tepid water when the eggs are required for use. Another plan is to take a wooden box, and to cover the bottom with a layer of salt about half an inch deep; place the eggs on this as closely as they can be arranged without touching one another. Add pounded salt between and on the top of all the eggs, then put in a second layer, and a third, until the box is nearly full. Cover over the top row with a thick layer of salt, pressing it down firmly. Close the box tightly, and keep in a dry cool place. Or a mixture as thick as cream may be made of a bushel of quicklime, three pounds of salt, and half a pound of cream of tartar. Place the eggs in this, and cover closely. It is said that eggs by this plan may be kept for a year. Eggs may also be kept in simple lime-water. Some housekeepers prefer to butter them all over, which preserves them in the same way as the gum. Eggs may be kept for a short time by placing them in a net, and hanging this in a dry place. The net must be turned about every day, and hung up in a different position. It must be kept in a cool and absolutely dry place, and, needless to say, the eggs must be quite new-laid when stored.

Filter, to contrive a.—Get a common flower-pot, fill up the hole at the bottom with a piece of sponge, cover this with a layer of small clean pebbles, and half fill the remainder of the space with

alternate rows of sand, charcoal, and pebbles. Cover the top with a piece of fine white flannel, tying it tightly round the margin of the pot. Pour the water on this cover, and allow it to run through the flower-pot into a pan beneath. If the water is boiled first, allowed to cool, and then filtered, by this simple contrivance all impurities will be removed.

Filters, to test.—Mix ten drops of Condyl's fluid in a pint of water. If the filter is efficacious, the solution should be colourless when it has run through.

Finger-rings, to remove.—When from any cause there is difficulty in slipping a ring over the finger-joint, pass the end of a piece of fine twine under the ring, pull an inch or so of the twine towards the hand, and wind the rest of it round the finger upwards nearly to the nail. Take hold of the end nearest the hand, and unwind it gradually, when the ring will slide slowly off. If the experiment does not succeed the first time, it should be tried again with a longer piece of string.

Fire-proofing.—Muslin, net, and gauze, may be made incombustible by using half the weight of whitening with the starch. Another plan is to dissolve half an ounce of alum or sal-ammoniac in water, and to add to it the water in which the material is to be rinsed. Wood may be made non-inflammable by soaking it in a solution of equal parts of isinglass and alum.

Flowers, to preserve.—Dip the blossoms directly they are gathered into a weak solution of gum and water. Shake off the superfluous liquid, and when dry arrange them as required in vases. It is said that the slight glaze thus obtained will prevent the petals from shrivelling.

Flowers, to restore.—Flowers that have been packed may be revived by cutting the ends of the stems and putting them for a time into very hot water. Should they be much faded, the best chance of restoring them is to immerse them in hot water.

Gas and Lamp Globes, to clean.—If these are much soiled, leave them to soak in warm soap-suds; if this fails to remove the stains, wash them in water in which a teaspoonful of powdered ammonia has been dissolved. Rinse them in clean water, leave them to drain, and polish well.

Gilding, to restore.—Lay on with a camel's

hair brush a mixture of half a gill of water, one ounce of purified nitre, half an ounce of powdered alum, and half an ounce of salt; or use the whites of eggs mixed with one-third their weight in soda. Another way of roving gilt frames is to dissolve the best gum arabic in water, to dip a rag in this, and carefully wipe off any dirt there may be on the gilding. When dry and clean, paint over with some of the same gum laid on with a camel's-hair brush. Another plan is as follows:—Mix a drachm of soft soap with half a pint of soft water—rain-water, or water that has been boiled will do; shake the mixture thoroughly, then add half a wineglassful of spirits of hartshorn and shake it well. Use an extremely soft sable or badger-hair brush, and apply the mixture to the frame. Leave it for a few minutes, then wash it off with clean soft water, and leave it to dry in the open air. The next day rub the gilding where bright with a wash-leather. It is recommended that glasses and pictures be taken out of their frames before these are cleaned. It is needful to note that only the best qualities of gold will admit of cleaning at all, the inferior kinds looking worse after the process than they did before.

Gold, to clean.—Make a good lather of soap and water, boil the articles in it, then lay them in powdered magnesia which has been heated before the fire. When dry, rub them with a leather, using a small tooth-brush for any elaborate work there may be upon them. Instead of magnesia, the ornaments may be shaken for a few minutes in a bag of dry clean bran. This method of cleaning gold does not apply to such articles as are set with gems, as many of these would not endure the soap and water. Such ornaments should be cleaned with a little dry plate powder, and rubbed with a leather.

Glue, to make.—Always purchase the best quality of sheet glue, as this is the most economical in the end. Break it into small pieces, and lay it in cold water for ten to twelve hours. Strain off the water and put the glue into a jar. Stand this in a small saucepan of boiling water, and place it near the fire so that the water simmers, but does not boil rapidly. See that no water gets into the jar. When the glue seems thoroughly melted, it should be free from lumps, and rather thinner than treacle in consistency. Be careful to use very little glue, as the nearer the two edges of a joint set together, the firmer will they be. Leave the repaired articles undisturbed for several hours, in order that the glue may become perfectly hard. Glue may be always improved by a few drops of linseed oil, and it should be kept strictly in a dry place.

Herbs, to dry.—Parsley, marjoram, sage, and thyme, may be kept for use during the winter months if the leaves are gathered before they are fully grown. Remove all the stems, and lay the leaves in a tray before a clear fire. Turn them frequently till they are perfectly dry, then rub them between the palms of the hands till they are as finely powdered as possible, sift them through a fine sieve, and put them into small bottles, which must be well dried before using. A great many leaves will be wanted, as they rub down into a very small quantity of powder. Equal parts of knotted marjoram and winter savory, with half the quantity of tarragon, thyme, and basil, form a good mixture for forcemeat, and, if prepared when the herbs are gathered and dried, will save much time and trouble when required for use.

Ivory, to clean.—Wash the ornaments well in soap and water, using a soft tooth-brush to remove the dust from any fine work there may be upon them. Dry them by laying them in bright sunshine, keeping them constantly wet with soapy water for several days while they are in the sun. Finally wash and rinse them again. Never let them get dry, or the heat will cause the ivory to warp. If the ivory is much stained, but not very deeply, rub the surface with finely-ground pumice-stone and water, moisten well, and lay in the sun to bleach as above recommended. If this does not succeed, wash the knife-handles or other articles with one part of nitric acid (*aqua fortis*) and ten parts of water. Polish with very finely-powdered whitening made into a paste with vinegar.

Japanned Articles, to clean.—Sponge with lukewarm water. When all spots and stains are removed, dry the article thoroughly, and polish it with a soft cloth and dry flour, giving a final brightening with a dry leather. The brightness of japanned articles is entirely lost if they are cleaned with hot water, and the japanning soon cracks and peels off.

Jet, to clean.—Rub the surface with oil of a good quality, using very little; then polish with a leather carefully, as the material is extremely brittle.

Lacquered Brass, to clean.—Wash in warm water, rubbing gently with a soft rag till all the dirt is removed. Do not use polish, lemon, or even soap, as these are likely to remove the lacquer altogether, and with it the polish of the metal will be lost.

Leather Boots, to waterproof.—Melt together one ounce of beeswax, half an ounce of

Burgundy pitch, one ounce of spirits of turpentine, one gill of linseed-oil; rub this mixture into the boots in the sunshine or before the fire. The leather should be quite dry before this composition is applied. Boots and shoes may be made sufficiently waterproof for ordinary use by rubbing them occasionally with vaselino or castor-oil. Another waterproofing mixture consists of one part of mutton fat, and twice the quantity of beeswax. The boots at first will not take a high polish. Another plan is to dissolve one ounce of powdered resin in a quarter of a pint of linseed oil, add two ounces of finely-chopped mutton fat, and simmer and stir over a slow fire till melted.

Leather, to renovate.—Rub it gently with a small quantity of French polish or white of egg. Book-covers may be greatly freshened by the use of equal parts of water and white of egg.

Looking-glasses, to clean.—Wash the glass with a sponge dipped in spirits of wine, then with a clean sponge and cold water. Dry with a soft duster that is free from fluff, and polish with a leather or silk handkerchief. If the glass is very dirty, dust the finest whitening or powdered blue over it before polishing. Be careful not to splash the spirits of wine over the frame, or to rub over the gilding. If the glass is very large, do a small portion at a time, so as not to wet it all over at once.

Mackintosh, to remove smell of.—It is said that the odour of india-rubber may be removed by wrapping the article in clean fresh hay.

Moths.—There is no surer preventive of moths than to shake and use furs and woollens constantly; but if this is impossible, they should be folded up closely and packed in linen wrappers, which must be folded thoroughly over so as to leave no crevice open through which the insects can creep. Sprinkle the articles between the folds with chips of Russian leather, powdered bitter apple, Keating's insect powder, cayenne pepper, or camphor. Some recommend that pieces of coarse brown paper, soaked in spirits of turpentine or eucalyptus oil, should be laid with furs, or that they should be sprinkled with two ounces of spirits of wine in which has been dissolved one drachm of camphor.

Oil-cloth, to clean.—After it has been swept, take a clean flannel, dip it in milk, and wipe the floor over with it. Then polish with a soft dry cloth. This has the advantage of making the oil-cloth less slippery than the popular mixture of beeswax and turpentine.

Ostrich feathers, to renovate.—If wet, hold before the fire and shake about till dry; then take an ivory paper-knife, or silver fruit-knife, and draw out each fibre singly under the edge of the blade and against the ball of the thumb. The closer the fibre is pressed, the tighter will be the curl.

Papier-Mâché, to clean.—Trays and other articles made of this material should never be washed in hot water. Sponge them with cold water, and if at all greasy, dust some flour over the surface while damp, then rub with a flannel, and polish with a dry cloth or leather.

Paste, to make.—Simple though it be, many people have no idea of the proper way of making paste. Take two tablespoonfuls of flour, and half a pint of cold water; mix a little of the water with the flour, so that it is rubbed down to a perfectly smooth paste, and is quite free from lumps, then add the rest of the water, put the mixture into a saucepan, and boil till thick enough, stirring frequently to prevent it from becoming lumpy. Add a few drops of essence of cloves. Another way of making paste that is required to keep is to melt a teaspoonful of powdered alum in boiling water. When cold, mix it into a batter with a tablespoonful of flour; pour into this boiling water very gradually, and stir well. This will probably not render it sufficiently thick, so turn it into a saucepan and boil slowly till thick enough.

Pencil-Marks, to preserve.—Brush the writing or drawing over with a thin coat of white of egg or varnish. A strong solution of isinglass answers equally well, but the paper should be brushed over with this before any drawing is put upon it. When finished, hold the sketch over a basin of boiling water; leave it to dry, when the pencil-marks will be quite fixed. It is a good plan to size the drawing several times at different stages of the work, leaving it to dry thoroughly between each.

Pot-Pourri, to make.—Mix half a pound of lavender flowers, half an ounce each of dried mint and thyme, a quarter of an ounce each of ground cloves and carraways, and one ounce of well-dried salt. This combination is excellent for putting into sachets for laying amongst linen. The following is a method of making true pot-pourri:—Collect half a peck of rose petals on a dry fine day, put some common salt in a china bowl, over this lay several handfuls of rose petals, and continue till all are used up. Sprinkle salt on the top, press the leaves down with a plate. Stir the petals about frequently, and after five days

or so, when they have become very moist, add three ounces of all-spice, and leave it again for three or four days. Add one ounce of bruised cloves, one ounce of broken cinnamon, one ounce of nutmeg, some unbroken all-spice, six grains of musk, and a little lavender or orange flower water. At the proper seasons put in the following flowers without any stalks or leaves—clove pinks, violets, orange blossoms, and lavender. Stir and shake the mixture occasionally, and keep it well covered. Freshen up every summer with new rose-leaves, prepared, as above described, with all-spice and salt.

Putty, to remove.—Get some nitric or muriatic acid (*aqua fortis* or spirit of salt), and paint the putty over with this with the help of a small brush. If left on for a few moments, the putty will become soft enough to be wiped off with a cloth.

Saucepans and Kettles, to clean.—The so-called “fur” that collects owing to the constant use of hard water may be removed by boiling with water in the vessel about two-pennyworth of sal-ammoniac or chloride of ammonia. After about an hour the incrustation will be found sufficiently loose to be easily removed. Wash and rinse the inside of the saucepan or kettle thoroughly before using it again.

Silk, to renovate.—Rub the silk on the right side with warm water in which ammonia has been dissolved in the proportion of two teaspoonfuls to half a pint. Turn on the wrong side, and iron with a moderately hot iron. Sweetened gin answers as well as the ammonia, the sugar serving as stiffening. Both rubbing and ironing should be done from selvedge to selvedge of the silk, more especially if this is corded.

Steel, to prevent from rusting.—Paint the articles over with purified beeswax dissolved in benzene. Prepare only as much as can be used at once, as the solution soon hardens; and remember that the benzene is very inflammable. The patent Silico Enamel is a harder varnish.

Stings of Insects.—Keep a rag soaked in extract of lead (*liquor plumbi*) over the wound, then batho it with hartshorn and oil, Goulard water, or cold water in which a little ammonia has been dissolved. In the case of a bee or hornet, the sting may be removed, if left in the wound, by pressing the spot with a watch-key, after which the sting can be taken out with a pair of tweezers. Camphor ice forms a pleasant preventive of the irritation caused by the attacks of gnats or mosquitoes. To make it, melt together, stirring frequently, one ounce of

spermaceti, half an ounce of camphor, a quarter of an ounce of white wax, and one ounce of olive oil, and apply when cold to the punctures.

Stoppers, to remove.—When a stopper has become fixed in the neck of a bottle, wrap it round with a cloth dipped in boiling-water. If the bottle contains smelling-salts, put it into vinegar and water, or into a saturated solution of citric acid. Leave it for a short time in a warm place, then stand it in hot water. If this is unsuccessful, hold the bottle in the left hand, and tap it on alternate sides of the stopper with a piece of wood and in an upward direction. Oil the bottle round the join of the neck and stopper, then warm it, and repeat the tapping operation. Pass a piece of list or woollen tape round the neck, and then hold the bottle tightly while two persons draw the list backwards and forwards briskly. Or fix one end of the list by tying it to a hook in the wall or a bedpost, and rub the bottle over it quickly while holding it taut with the left hand. The hotter the glass becomes by the friction, the sooner will the stopper be loosened. Another plan is to take a pen or a strong needle, and to run this round the top of the stopper; then give the stopper a steady twist towards the body with the right hand, and it will probably come out. If one alone is not successful, combine several of these methods.

Tins, to label.—The difficulty of getting labels to adhere to tin may be overcome by adding a little glycerine to the glue. It is also stated that if all grease be removed from the tins by washing them in a strong solution of soda, and if the place to be covered by the label be rubbed with a slice of raw onion, the paste will stick perfectly.

Tortoiseshell, to mend.—Bind the two parts together with a wet cloth, tape, or linen. Heat a pair of tongs, and with them press the joint till it unites.

Tortoiseshell, to polish.—Rub with the finest powdered rotten-stone and oil. Finish off with jewellers' rouge and a soft dry leather.

Velvet, to renovate.—Mix water and spirits of hartshorn in equal quantities, and rub the velvet with a brush dipped in the liquid. When all stains have been thus removed, raise the pile by holding the velvet over a hot flat-iron on which a wet cloth has been folded. Use a brush very lightly for those places that are too much “phushed” for the iron alone to renovate them.

Walls, to plug.—It often happens in modern houses that the wall is too soft to allow of a nail

being driven in, securely to hold a picture or bracket. To obviate this, get a piece of wood, square and quite firm. Cut it into a sharp point at one end, and drive it into the wall as if it were a nail, as far as it will go. Saw off the extra length close to the wall with a small saw, then drive the nail or screw into the wood, when, if the plug is successful, it will be quite firm. If not, dip the nail or screw into melted glue before fixing it; or bore a hole in the wood, fill this with powdered resin, and make the screw or nail so hot that it will melt the resin, then screw or hammer it in before it has had time to cool.

Windows, to render opaque.—Cover the glass equally with one or two coats of paste. When dry, take a rag dipped in varnish composed of Canada balsam and turpentine. Brush this over the paste, and leave till dry. A prettier method is to clean the glass, and then apply freely with a sponge a saturated solution of Epsom salts or alum in beer; this will rapidly crystallise in beautiful frosted patterns.

Wine, to cool.—Wrap the decanter in a wet cloth, covering it entirely with the folds of linen, then set it in a draughty place till wanted.

GARDENING FOR DECEMBER.

The Lawn.—After the last mowing and general clean-up of last month, there is not much to be done here. When the weather is fairly fine, a light sweeping with a new broom will remove the worm-casts and any odd leaves and litter. Then a good turn with the roller will do good, and make a more lasting impression now the surface is not so dry. The tennis ground should have any needful repairs to the turf seen to in good time, so as to have it in good order again early in the spring; when this is being done, a little allowance must be made for sinking—this will be better than beating it down too excessively hard at first. The roller should be passed over the entire ground each way, and repeated every few weeks to keep it as level as possible; it will also be advisable not to walk upon the turf more than is really necessary at this season of the year.

Cutting Shrubs for Christmas Decorations.—This should be seen to a few days in advance of the time they are required, the weather being very unreliable at this season. If it should be wet, snowing, or frosty just when it has to be done, the result is the shrubs are cut in a careless manner, and oftentimes disfigured for some time to come. In cutting them the best way is to adopt a thinning process, taking a shoot here and there; never cut away indiscriminately—especially at good shrubs. At times it may happen that some particular kind is growing too tall for its position; the tops of such may be taken off at the required height, and used to advantage. The Ivy will be found very useful in a cut state: with a little care, long trailing shoots may be had, and when taken here and there will scarcely be missed at all. The chief point to observe in shrub-cutting is to take the shoots, as advised, by a thinning process; it is then most surprising what a quantity

may be cut even in a small garden without being greatly missed. When cut, the shoots should be placed in the dry, so as to be pleasanter for handling.

Gravel Paths.—These should now be kept as clean as possible; bright and clean-looking paths in the dull season of the year help greatly towards the good appearance and keeping. The roller should be frequently used to keep the paths smooth, and prevent any waste of gravel in sweeping. The gullies should be kept free of grit and dirt. A thorough good clean-out at this season will last for a long time; thus the drains will not get choked, and the paths at the same time will be kept drier. Any inequalities may now be remedied easily by just breaking the surface with a digging fork, then, after smoothing down again, give a good beating and rolling. Do not now attempt to kill weeds by the "Weed Destroyer;" it would be waste of material, and not nearly so effective as when the paths are in a dry state.

Strawberry Plantations.—The young plants, which should now be well established if our previous directions have been carried out, will need looking over when the weather is favourable. If there is any appearance of secondary runners still remaining, they should be removed: the ground then ought to be lightly stirred over with a Dutch hoe, not approaching too closely to the plants. This will remove any weeds still upon the ground; when the latter have been allowed to increase to any extent, they should be hoed up first, and then raked off, with any leaves fallen from surrounding trees at the same time. Then the ground can be stirred over as directed, pressing the soil firmly around each plant if needful, and drawing a little more up to it if any

of the roots are close on the surface. Old plantations will be improved by the application of some well-decomposed manure between the plants, to be then lightly forked in, especially if the ground is poor and the plants previously non-productive and weakly. It is a great mistake to dig deeply between rows of Strawberries; they are not deep-rooting plants, and when thus treated many of the roots must inevitably be destroyed, and the plants weakened thereby.

The Fruit Store.—This should be frequently examined to see that no specked fruit are left to contaminate others. If once a fruit becomes quite rotten, it will communicate the disease to those around it, more readily so in the case of Pears than of Apples. The fruit by this time will have got over the sweating process through which it passes after being stored; this is most noticeable in the case of Apples, which partake of an oily character upon the skin. So much ventilation will not therefore be needed; in fact, it may now be almost dispensed with. When sharp frosts occur, and there is the least danger of the fruit being frozen, means must be taken to guard against it. A thermometer in the fruit room is a most useful article; when it indicates a temperature as low as 35°, it is time to give some protection. If there be a window, it should be covered up, so as to exclude the cold air; when very severe, on both sides of it if possible. The fruit should be covered also with dry material such as old sacking or bags; straw would also do when available. In this way it will take a very severe frost indeed to do any harm to the fruit. Close attention should also be paid to the ripening of each kind. It sometimes happens that the fruit (of Pears chiefly) is ripe before one is aware of it, and some of it probably spoiled before it can be consumed. Under-sized fruit of Apples, instead of being allowed to remain unused, should be given out for stewing whole, for which purpose they are far better than those of larger size, both in cooking and appearance.

Fruit-trees.—When the pruning has been all completed as previously advised, it will be necessary sometimes to resort to means for the destruction of mossy growth upon the stems and larger branches. This can very well be done by obtaining some "chalk" lime fresh from the dealers, slaking it, and then making it into a wash rather thicker than is usual with whitewash. To this should be added a little soot, to tone down the otherwise showy colour of the wash; the mixture should then be applied, by means of a whitewash brush, on the stems and branches of larger size. This mixture will also kill many insects, or render their retreats obnoxious to

them; thus it will answer two purposes. When this operation is being finished off at the ground line, the soil should be raked away from the stem for a few inches in depth, and the wash carried down as low as possible, the soil being afterwards replaced. This remedy is most needed upon large orchard trees, but will do no harm to those of lesser size.

Those who may possess any old trees of either Apples or Pears, which for several years have had but little attention given to them in the way of pruning, will do well to thin out the branches, taking away the weakest wood. In many cases, where left to themselves entirely, the woody growth becomes so dense, and forms such a complete shade over the outer surface, as eventually to kill the under-branches, which should be advancing to take the place of the others. This thinning-out will have to be done with a pruning saw in the case of larger branches, and either with a pruning chisel or strong branch pruning shears for the smaller ones. The chisel is similar to a carpenter's tool of that name, but has a long handle (from four to six feet in length), the width of the blade being about two inches. This tool, when sharp and its use well understood, can be made to do a lot of work; the end of the handle being struck exactly as a carpenter would do. It saves using a ladder in many instances; and the work can be done equally as well, as quickly, and with greater comfort when standing upon *terra firma*. This pruning can be effected without any personal inconvenience even when the weather is fairly cold, as it gives a good amount of exercise. The advantage of a good and careful thinning-out of the branches will be apparent the following season in a stronger growth, and the succeeding year it should be so in the produce itself, that being of better quality also. The wood taken out of the trees in this way can all be turned to good account for firewood—the spray for lighting fires, the larger pieces to burn as logs in cold weather, thus affording occupation when outside work is not possible.

Kitchen Garden.—In this department of garden work a great saving may be effected by careful selection of the vegetables for cooking. By commencing upon any given kind before it is too far advanced, the crop can be kept fairly well in hand, so that none become too old for use. It is a mistake to allow vegetables to grow to an extra size with the idea that large examples are the best; it is not so by a long way, neither does it further economy in the least. Take Beans and Peas as instances; if the earlier of these are allowed to grow to a large size, it is done at the expense of the later portion of the crop, and that, too, is not nearly so continuous; this is especially so with French Beans, the pods of which

should always be gathered whilst still young and tender, before the seed is of any size, or of a stringy character about the pods. Cauliflowers should also be cut whilst the heads are still firm and of a clear colour; as they get older, the heads become soft and spongy, and do not then cook nearly so well. Brussels Sprouts are another instance; if these are left too long, the most advanced ones will begin to lose their outer leaves by decay, and the sprouts when cooked will be found rather strong in taste. Turnips, too, should be used when of medium size; as they grow older, there is a waste caused by their woolliness. Other instances could be cited, for it holds good, in some way or other, with nearly every crop that is cooked before it arrives at maturity.

A considerable saving may also be made by never taking more of any kind of vegetable at one time than is really required for cooking. It is better to use up all when fresh cooked than to have some left, probably to be wasted in the end. If these points are all carefully considered and acted upon, a small garden may be made of much greater service. The trimming of vegetables does not come within our province, but we feel bound to say that here also it is possible to effect economy; vegetables are often recklessly wasted in so-called preparation for cooking, being frequently left to be seen to by those of but little experience.

As any ground becomes vacant, or the refuse only of a crop remains, which should at once be cleared off, some manure should be wheeled upon it in frosty weather, when no harm is done to the soil or to the paths. Such a time is the best to choose for clearing out as much as possible of the manure heap and any refuse of manurial value. Not only is cleanliness effected in that direction, but the proceeds are turned to good account also. The manure should remain in heaps on the ground until it is convenient to dig it in, and not be spread over the surface at once. Endeavour in every way to keep the kitchen garden tidy, do not leave any trimmings of vegetables lying about on the ground, but remove to the refuse heap at once; decaying vegetable matter is always objectionable as well as unsightly.

Chrysanthemums.—As soon as the plants are of no further use for the value of their flowers, the stems should be cut down within a few inches of the soil, and the pots then stood as near the glass as possible. The young shoots pushing forth from the base will thus be prevented from drawing up weakly, the object to be aimed at being the securing of the cuttings as sturdy and short-jointed as they can be had. These will not only strike better, but afterwards make superior plants, a good commencement being at all times desirable. If there is a cold

frame or pit at liberty, or one from which the plants can be now transferred to the greenhouse, such would be a good place for the plants as soon as they are cut down. In a case of this kind the only precaution needful would be some protection in frosty weather, just sufficient to keep them from being frozen. About the middle of the month, or at any rate before Christmas, there should be a sufficient quantity of good cuttings available for insertion. This work may, for the sake of convenience, be done in two or more batches, as some kinds do not push up their young growths so quickly as others. The pits are the first things to be prepared; these should be crooked or drained nearly half way up, clean pots only being used. The best size for the purpose is what are called "large sixties," from three to three and a half inches in diameter. The soil should be fresh and sweet, good turfy loam with a little well-rotted manure and an abundant supply of road-scrappings or sand. This soil should all be passed through a moderately fine sieve for cuttings, to remove any coarse particles, rubbing down all that can be treated thus, to pass it through and save waste. The pots should be then filled up nearly to the top and pressed down moderately firm, leaving just sufficient room for a surface dressing of sand. If the soil is fairly moist, the pots will now be ready for the cuttings; if otherwise on the dry side, the pots should be watered through a fine rose. Fresh labels should then be written for each sort, as those in the pots cannot yet be spared, in case other cuttings have afterwards to be taken where any have failed to strike.

A few sorts at a time should then be taken off, and each one tied up separately with its name. Many of these cuttings can be had from what are really suckers, which in some cases will already have roots of their own. These should be cut off below the soil; and even if they have not any roots at the time, they rarely fail to strike. The cuttings taken off from shoots of greater length should not be cut too long, from three to four inches being sufficient. About half the length of the cutting should be inserted in the soil, each one being pressed down firmly, and all placed around the edges of the pots, in which way they strike more freely, the young rootlets appearing to enjoy that position the best; the labels may occupy the centre of the pot. When small pots are scarce, larger ones may be used, but in this way it requires two pots to make up an arrangement; a pot ten inches in diameter could be utilised, but another of six inches at least must be placed inside it, both rims being level and the inner pot left without any soil in it. In this manner both edges or sides can be used for the cuttings, and thus five or six kinds can be struck in one such arrangement. The cuttings require a little trimming before

insertion, about one-third of the leaves being cut off clean at the base of each footstalk, and a clean cut made of the end of the cutting before it is thrust into the soil. A gentle watering is then necessary, to settle the cuttings in the soil; this should be given with a fine rose on the can. After the water has drained off, the pots may be stood where they will remain until the cuttings are rooted in the early spring. If in a greenhouse, a spot as free from draught as possible should be chosen, a shelf near the glass being as good a place as any in the house. The best place, however, is a cold pit without any artificial heat at all; here the cuttings will be quite safe through the winter, with the frost just kept out by side protection permanently arranged, and upon the glass whenever required. They are kept much fresher in such a place, although they may not strike quite so quickly; but it is with quite as much certainty, and far less trouble and attention into the bargain. No after-watering will be needed for a long time in a cold pit, but in the greenhouse attention in this respect must be given. In the former place a little ventilation will do good in favourable weather; but when not so, no harm will accrue if none is given for several days at the time. Watch will need to be kept against slugs eating off the cuttings. The slug most to be feared is that of a greyish-white colour, which does more harm now than the black ones; it is generally to be found upon the outer sides of the pots, or in the drainage-hole at the bottom.

Some few kinds are at times rather backward in producing cuttings; these had better be kept in the greenhouse, but should not have much water given them. The plant may for a while look as if it were dead; it is not often, however, that such is the case; even if the cuttings are not taken from these backward plants till the New Year, there will still be time to obtain material for the next season. After the main crop of cuttings is secured, it is not necessary to keep more than one plant of a sort; many of them may be turned out around the walls or amongst the shrubs, especially the early-flowering and pompon varieties.

The Greenhouse.—There will not be very much work to be done here now, but still the plants must not be neglected, with the impression that when neither potting nor watering is required to be done, there is no need of attention in other respects. The ventilation at this season of the year is as important as at other times. So much certainly is not needed, particularly when the weather is cold, but it is always a good plan to put on a little air for an hour or two in the day when the weather is in any way favourable. Cold winds are the chief thing to guard against—very little air will be sufficient, and

this should be chiefly at the top of the house. When any is admitted in cold weather from the front, it rushes into the house very quickly and therefore must force the warmer air out at the top to a great extent. In cold weather the best means of admitting fresh air at the front is by means of air-bricks on a level with the hot-water pipes; in this way the air is warmed as it enters the house, and the temperature not therefore lowered to any serious extent. In damp or foggy weather, top ventilation only should be given when it can be done without sliding the lights: where these are open very far, the effect is opposite to what should be aimed at, viz., keeping the atmosphere of the house on the dry side. Advantage should be taken of the weather when fine and mild to thoroughly ventilate the house, closing again just before dusk. It is not safe to leave any air at night, unless there is a little fire burning; then it is at times desirable, to prevent the temperature from rising too high.

When the ventilation is not attended to as it should be, there will be an accumulation of damp, which will result in the foliage of soft-wooded plants suffering and decaying. This decay of the foliage needs to be looked after very closely, and prevented from extending by removing the affected parts. At times there is an appearance of mildew; when this is seen, a light dusting with sulphur, as in the case of the Rose-trees, should be given. The watering should be done early in the morning; for an ordinary greenhouse three times in the week will be sufficient to go thoroughly over all the plants to see if any are in want of this attention. No water should be thrown about the house now, save for keeping the floors clean, and once a week will generally be sufficient for this to be done.

The Chrysanthemums will not now occupy so much room; those plants therefore which have been rather more crowded together than is desirable for their well-being should have better positions given them. The climbers where at all overgrown, and thus causing a shade, should have the weakest wood cut away and the rest tied in closer. Some of the foliage, too, should be thinned out where it is very thick, taking away that which is the oldest. Where Roses are grown under glass, a considerable quantity of the leaves may be safely removed, which will be better in this case than cutting away much wood before the early spring. The majority of the climbers will not now require any water, especially if they are quite at rest: it will do them good rather than otherwise to be kept dry; some of the leaves will thus fall sooner, thereby giving more light still. When there are insects upon the climbers, every effort should be made at this season to get rid of them; then with another good cleaning when the pruning is finished

a few weeks later on, they should not give rise to any future trouble for some time.

Plants in Pots for Rooms.—These are more valuable at this season than at any other time of the year, and with careful management there are several that will do very well for weeks together when a good amount of light can be afforded them. Not that it is advisable to keep the same plant in a room for more than two or three days if it can be avoided. Where there is a greenhouse, it is much better to change them frequently, and thus ensure their health. In cold and frosty weather do not leave the plants at night-time very near to the window; the middle of the room is the better place. Be careful with the watering of these pot-plants, as in rooms where there is a fire they will dry up quicker than when in the greenhouse. Do not let any stagnant water remain in the vases into which they may be placed. The foliage should in possible cases be frequently sponged when the plants remain in the rooms for weeks at a time; this will help to keep them fresher. The following are some of the best to choose for the cold season, viz.:—*Aspidistra lurida* and its variegated variety, both of which are most reliable, and also easy to grow; the India-rubber Plant, or *Ficus elastica*, lasts well, but is not quite so hardy as the first-named; *Dracæna congesta*, very good in a small pot for the dinner-table; *Kentia australis* and *K. Forsteriana* are two of the best of all the palm family; *Cyperus alternifolius* is an elegant grass, with whorls of leaves upon its slender stems. *Asplenium bulbiferum* with dark green fronds, *Davallia canariensis* (the Hare's-foot Fern), and *Pteris cretica*, are three good hardy Ferns, far more satisfactory for rooms than attempting to grow the tender Maidenhairs. *Araucaria excelsa* (the Norfolk Island Pine) is quite a miniature Fir-tree, lasts well in a room, and is so very distinct in the growth. The red-berried *Solanum*, so much seen in the winter, will last a few days in good condition, but should not be allowed to suffer for want of water.

Work for Wet Weather.—*Sponging and Cleaning of Plants.*—This affords a most convenient occupation when the weather will not permit outside work to be done with any degree of comfort. Those who possess any pot-plants that are infested very badly with insects, will do well to see to them the first opportunity they may have. This is the best time of the year for a thorough cleansing, as there are not so many young leaves, which are liable to be injured in the operation. It must not, however, be inferred that one cleansing will suffice; it does a deal of good, but should be repeated again in a month or six weeks: There are several good insecticides now

in the market that are very effectual, but which should never be used beyond the printed directions until one is well acquainted with their properties. For our own part, we prefer the "Chelsea Blight Composition" for sponging plants, having used it with good effect for several years. For all ordinary uses this may be mixed at half-strength only, and thus made to go twice as far in its application. With this and any other liquid kind, care should always be taken to mix thoroughly the contents of the jar before any is taken out, by giving it a good shaking. All insecticides should be mixed in warm water to dissolve effectively the ingredients, and only sufficient prepared for present use.

Sponging the leaves very carefully and lightly on both sides with a soft piece of sponge, free from sandy matter, can be done without much trouble. This will soon give the plants a better appearance, and be as effective, comparatively speaking, as cleanliness in human beings; for even when no insects are present, the sponging will be beneficial in removing dust and dirt. The insects chiefly to be removed by sponging are the Brown Scale and the Black Thrip; fumigation does not, unfortunately, have any effect upon the first-named, but it kills the latter in nearly every instance, leaving, however, traces of its existence which have to be removed. The Mealy Bug, which is the dread of many plant-growers, does not give much trouble in cold houses; but in those where the warmth is beyond an ordinary greenhouse, it often increases rapidly. It may be got rid of by persistently using the insecticide named above at its full strength.

The plants that are chiefly benefited by sponging, simply to keep them clean and bright-looking, are the India-rubber Plant, the *Aspidistra*, the Palms, the *Dracænas*, the Camellias, and other plants which have smooth glossy foliage. Others, however, must be sponged when infested by insects: but do not, when using the insecticide, syringe the plants afterwards, unless it is applied at its full strength of mixture. The stems, where hard and difficult to clean with a sponge, may be brushed with a paint-brush, which will reach the crevices where some are laid up.

Fumigating Greenhouses and other Structures.—A few fumigations at this season of the year will have a good effect in clearing the plants of Green Fly and the Black Thrip, both of which do not increase so rapidly now as in warmer weather. Now is, therefore, a good time to endeavour to eradicate both as far as possible; they are not now so vigorous and retentive of vitality; a less degree of strength in fumigation will, therefore, often suffice to destroy them. The chief point to observe is to

select a quiet afternoon for the operation, and also to see that the plants are not wet upon the foliage previously to its being done. The thrip, previously alluded to, is a most troublesome insect to such plants as Azaleas, Camellias, the India-rubber Plant (*Ficus elastica*), and some others of an evergreen character; it is generally to be found upon the under-surface of the leaves. Here its presence is not often detected until it has done considerable injury, and permanently marked the leaves by turning the hitherto green colour into a grey, with a shining appearance and black spots here and there. Green Fly is more at home upon the points of young shoots of plants of quick growth, such as the Pelargonium, the Calla Lily, the Cineraria, and several kinds of bedding-plants. It does not do so much injury in a permanent manner, but should always be nipped in an early stage, or the filth left behind makes the plants look dirty; and as this generally happens upon such as cannot be conveniently sponged clean, it remains an eyesore.

Up to within quite a recent date, we have never found anything to surpass tobacco or tobacco-paper for fumigating purposes; the greatest drawback to the former, which is most effective, is its price, whilst both want attention during the burning, to prevent any flames issuing forth; when this latter happens, there is great danger of injury by the additional heat of the smoke. This in most cases causes the postponement of the operation from time to time by the unpleasant recollections of past attempts. Of late, however, we have tried a new preparation, of moderate price, in which there is apparently an amount of nicotine with other ingredients that are not in the least offensive at the time; nor is there an unpleasant smell left behind afterwards. It has a proportion of saltpetre, we think, in its composition, to encourage combustion; for when once lighted and fairly burning, no more attention is necessary. It is sold in rolls (with directions for use) in various sizes, each roll being marked with the amount of cubic feet capacity, which in itself alone is an excellent guide to those who have had little experience. It is called Campbell's Fumigating Insecticide, and may be had of Messrs. Clibran and Son, nurserymen, Altrincham, Cheshire, or of nurserymen and florists who stock gardening requisites. In our opinion it will be the fumigating material of the future, especially so for amateurs and small growers with only a house or two over which they exercise their personal supervision. After repeated trials it has been found to kill the insects without harming the foliage in the slightest degree. Should curiosity prompt any one to examine the plants whilst the roll is burning, he can do so with safety.

In all cases of fumigation it is a better plan to repeat the operation on two successive evenings than to apply one of excessive strength. In the meanwhile do not apply the syringe, nor for a few days afterwards; it is a common practice to do this to wash away the dead insects, forgetting it is at the same time facilitating the revival of those which are only stupefied, by cleansing the leaves of the deposit left behind after the fumigation. This work should always be done when the sun has no further power the same day; morning fumigations are not so safe, unless shading can be applied at the same time. Any plants that are badly attacked should, if possible, be laid upon their side before commencing operations, so that the insects fall from them. Where there are two houses, the plants that require attention in this respect may often be brought together in one; the little additional labour is nominal compared with the saving in expense of material. Plants in pots from cold frames should be brought in also, if needful; it is often an awkward matter to fumigate such places in an effective manner without burning the plants. A few days after the operation a thorough clean-up is advisable, picking off any faded foliage, and brushing the stages, &c., under the plants. Then, if necessary, any plants requiring a syringing can have that attention; this should be done by laying the plants upon their sides, as it is not advisable at this season of the year to wet the soil in the pots more than possible, except at watering-time. If ashes or shell gravel form the surface instead of a wooden staging, it should be freshened up, and some more added if needful; insects often lurk amongst this material, especially if there is a little vegetable growth to afford them a refuge. The sponging of the plants, recommended in this number, would also be an after-operation productive of good results in many instances. Plants of delicate growth, which are never seriously attacked by insects, should not be fumigated if it can be avoided. The Maiden-hair Fern may be cited as an example; this may possibly be injured unless well removed away from direct contact with the smoke, or else taken out entirely during the process of smoking.

The Greenhouse Furnace, and Stoking the Fire.—The subject of heating the greenhouse or conservatory attached to a house is one that is but imperfectly understood. When the kitchen boiler can have part of its energies diverted to warming hot-water pipes, as we suggested at the commencement of these articles, all that has to be done is to turn on the valves when the heat is required. This is not much trouble beyond banking up the fire at night with fine coal, and in many

instances may be made to answer very well indeed, particularly for small glass-houses. When this is found to be impossible, the best way is to have an independent heating apparatus with hot-water pipes. It is not advisable to adopt the flue system of heating by hot air; with the latter there is always a risk of escape of sulphur fumes, and also a drier atmosphere than is good for plant life. The boiler power should always be sufficiently provided for; one that is too small for the amount of piping attached to it is always a source of trouble in cold weather; a boiler too small for its work causes a waste of firing by the sharper draught that has to be allowed, part of the heat thus escaping up the chimney.

In arranging a hot-water apparatus it is never advisable to have the work done by contract without a specification of the amount of piping and the boiler power. The best plan is to take the advice of a person of professional experience in this kind of work, such as a nurseryman or florist who has pipes at work in his own line of business. The stoking of the fire requires some little experience before it can be managed to maintain the correct temperatures without burning fuel to waste. A high night temperature is a great mistake; those which we have from time to time advised should not be exceeded in those particular instances. For an ordinary greenhouse the fire should never be much trouble in the evening; when the weather is very cold, it may want looking to twice after dusk, but at other times once is sufficient. When the weather is mild, a small fire only should be maintained, and the damper in the chimney kept in nearly close; at other times a larger fire will be necessary, with the damper farther open.

It is a common error in stoking fires to put on as much fuel in mild weather as in cold, merely depending upon the damper as a regulator. When the fire is looked at the first thing in the morning, the dust, ashes, and clinkers should all be well worked out if the weather is cold; at other times it is not so important. A clear fire will soon work up the proper heat in the pipes; it should then be banked up for some hours, according to the state of the weather, and not kept going with the full draught on. Whenever the heat is found to be in excess, the ashes from the furnace should be well wetted and thrown upon the fire, then beaten down with the shovel, and left. It is a good plan to always keep a few of these ashes wetted in readiness, which will often be a means of saving the better fuel. A few can generally be put on the fire as a finish, the last thing at night, when a sharp fire is not needed. With good management there need not be much besides the clinkers to be taken out of the stokehole. The fire should always be seen to as

early as possible in the morning; it is important in cold weather to push it on, and in mild weather just to keep it alight. In cold weather even the firing may often be spared when the sun is shining; the prospects of the day should be calculated upon in all cases. At times there may be an interval when the fire may be dispensed with for a few nights, but it should always be kept laid in readiness, and the outside temperature carefully noted. A sudden fall may take place, and often does so as the moon rises after dusk.

Every week or two the flues should be cleansed; when these are foul, there is a loss of heat, with a greater difficulty in stoking. In doing this work look well to the bottom part of the chimney, where there should always be a soot-door. A long flue-brush should be kept for the purpose of clearing the sides of the flues; then the raker or hoe will draw it all out clean. This work should be done either when the fire is very low or quite out. The fuel usually burnt in these boilers is coke; but a mixture of coke and Welsh steam coal, which is smokeless, gives a more lasting fire; the difference in price is not of any importance. The coal should be broken up to about the size of the coke. The feed-cistern should be carefully looked after, especially if there is any danger of the service-pipe being frozen; the occurrence of this must be guarded against. When there is any amount of air in the pipes, the water does not circulate so freely; in fact, sometimes the circulation is greatly impeded, especially if air-taps are fixed upon the pipes, instead of a long open air-pipe; the latter is always the safest, and needs no attention. The feed-cistern should occasionally be cleaned out; rust will accumulate if this be not seen to, with a danger of the feed-pipe being choked where it enters the pipes. When the amount of piping is not sufficient to keep out a sharp frost, a mat or two, or some canvas, should be nailed along the parts most in danger; this will make a considerable difference. At the time of lighting a fire take note that the valves are open; when there is only one service, these will not probably be used, but in other cases see that one set is always open for a free circulation; otherwise a strain will be put upon the boiler which may lead to dangerous consequences, boilers having been known to burst when the valves were all closed.

The Vinery.—In most cases the grapes will now be cut; but if a few bunches are still left upon the vines, it is not advisable to prolong the hanging any longer. The better plan is to cut what few bunches are left, with a good length of wood attached to the bunch; nearly about a foot in length can generally be secured. Then if there are a few

empty bottles which will hold a pint or so of water, the wood when trimmed of its leaves should be thrust as far as possible into these bottles. If the bunches are likely to be kept for a few weeks, a bit or two of charcoal should be added to keep the water pure and sweet. In this way it is possible to keep the grapes for months in a dry room. When this system of keeping grapes is adopted, some arrangement must be made for the bottles to be secured firmly in a slanting manner, so that the fruit does not rub against the side of the bottle. About three times a week the fruit should be looked over, to see that there are no decaying berries; the room where they are kept should have the light excluded, and no air admitted except in dry weather.

This plan of keeping the bunches can be adopted much earlier in the season if it is absolutely necessary to occupy the house with plants. The end of September would be a very good time, when plants have to be stored under the vines as soon as frost is apprehended. In such a case rather more of the growth of the vines may be removed, so as to admit light and air, and thus make both ends meet. In such a case there is, however, rather more danger of the vines being attacked with mildew, the best safeguard against which at such a time would be to admit a good amount of fresh air whenever there is an opportunity, and to apply a little sulphur to the pipes with a paint-brush, the fumes from which will be thrown off whenever there is a slight heat in them.

As soon as the grapes are cut in December, the vines may be pruned: this had far better be done now than deferred into the New Year, and should never on any account be put off so long as February, or the sap will be again rising, and the vines bleed when pruning is performed. When done in December, the little energy still left in the vines will go towards swelling up the back buds for another season, and no danger need be apprehended from bleeding. In performing the operation of pruning, regard must be had to the age of the vines. If they were only young plants turned out the previous spring, they should be cut back rather hard, as low as the bottom of the roof is none too much. If they are a year older, they may be left one-third of the way up the roof; and so on from year to year until the top is gained. Unless in the hands of practised cultivators it is never advisable to leave the rods too long the first few years, or the lower spurs will very soon be weakened, and in many cases the eyes upon the main rod will not break into growth in an even manner. When the rods have reached the top of the house, the pruning is a simple matter; all that has to be done is to spur in the side shoots almost close to the joint from whence they commenced to grow in the

spring. On examination a prominent eye will be seen nearly at the base of each shoot; this should be generally relied on to produce the shoot for the future season. More than two good eyes should not be left upon each spur; these will both generally be within one inch of the base, and in the majority of cases the outer one of the two may be dispensed with when young growth commences in the spring. When the pruning is done without any previous knowledge or advice, these shoots are frequently left much longer; but the vines soon look unsightly, and are also weakened by these long spurs. In pruning, the cut should be made quite clean, with a sharp knife, and about half an inch (no more) above the bud. In any case where the spurs have died, or failed to break the previous spring, the spur below it may be left longer, so as to gain a shoot to fill up with when there is any great vacancy on the rod. Any little dead pieces of wood, or aerial roots that have issued forth from the base of the spur, should also be carefully cut away. Then the roughest portions of the bark may be pulled or rubbed off, but never remove any that is not absolutely loose. Some recommend even this to be done, but it is both non-practical and most unnatural to do so.

If there have not been any insects to give trouble, or any signs of mildew during the past season, nothing else is needed to be done save tying up the vines in their position again with fresh-tarred string. If, however, there has been trouble from one or the other, the rods must be dressed with a solution to answer both purposes. This should consist of about equal parts of sulphur and soft soap (in weight), with a little tobacco juice added to it; then add sufficient clay-and-water to make it to the consistency of paint. (Half a pound each of sulphur and soft soap, with the other mixture, will go a long way, and in many cases be found ample.) This mixture should be boiled for about ten minutes, and, when cool, applied with a paint-brush, and well worked into the crevices around the spurs, being careful not to injure the dormant buds, the whole length of the rod being treated down to the ground-line. This mixture will soon dry, and will not be found to come off easily; at the time of application it should be frequently stirred, to keep it evenly mixed.

All of the woodwork and glass will require a thorough cleansing; for this a mixture of soft soap and soda is the best, but it must not be used strong enough to injure the paint. After this has been done, it is somewhat surprising to note the vast amount of additional light that is admitted, clearly demonstrating the necessity of a good cleaning. This work should be done before the vines are dressed and tied up in their places. When the latter is completed, a light skinning of the surface soil

should be made; this will remove all the refuse that may have accumulated during the season. A good watering, so that all of the inside border is well soaked, should next be seen to; but in order that the soil may be equally moistened, the surface should be lightly forked over. After a few days, and where the soil begins to dry up upon the surface, a top-dressing of good loam and manure (from the farmyard if possible) should be given. Failing the latter, some bone-meal—*i.e.*, bones crushed up finely—should be used instead; or a dressing of an artificial manure if the vines are in any degree weakly (one gallon of artificial manure to two wheel-barrow-loads of soil making a good mixture).

When this has all been completed, the house should be kept as cool as possible, just excluding the frost by a few degrees. It may, of course, now be utilised as a cold greenhouse, being very well adapted for any plants that thrive under cool treatment. Should the house be a lean-to, the back-wall may very well be turned to good account for planting something that will prove useful, and for this purpose nothing is better than the best of the scarlet, white, and pink Geraniums of various shades, taking care not to choose any that are of dwarf growth. Of scarlet kinds, Vesuvius is a free flowerer; George Potter is a stronger grower, with very fine trusses; and Henri Jacoby is a dark scarlet of free growth. Of pink kinds, the following are good ones—Lady Chesterfield, a salmon-pink of a most pleasing shade; Mr. R. Hayes, a bright pink, flowers well in the winter; and Paul Bauer, a rich pink with white. Swanley White is the best of its class. The foregoing are all single kinds; but if double ones are preferred, the following are good sorts—Wonderful, a double Vesuvius, free bloomer; F. V. Raspail, a deep scarlet; Rosa Bonheur, a soft rose-pink; M. Caro, lilac-pink, large trusses; Magenta King, a fine variety of its colour; and Candidissima Plena, a good white. The advantage of the double kinds over the singles is in their greater durability when cut for decorative uses; but if the chief requirement is to make a display upon the plants, the singles are to be preferred. Hardly any preparation need be made for planting these Geraniums; they do not require a great amount of soil, but it should be of good quality, though not rich with the addition of manure. There are also several very fine kinds of Ivy-leaved Geraniums, but these are better suited as climbers in the greenhouse, where they would not be so much shaded. Green fly also attacks them, and this when in a vinery is rather awkward to destroy at all times.

The Renovation of Old and Neglected Gardens.—This is a subject upon which some

remarks are needed, the question often being asked, "What is best to be done with such gardens?" The reply may very appropriately be divided into two parts. The renovation of an old garden which may not have been neglected to any serious extent, is a comparatively easy matter. With a little labour and fresh material it may be efficiently done, and the garden so transformed as to be scarcely recognisable a few years afterwards. At the outset some definite idea of the alterations to be effected should be thought out, and a rough plan, at least, be made as a guide whereby to carry out the work. The original ideas of some years back will now possibly be capable of considerable alteration, through the enlarged growth of the more robust trees and shrubs. Where it is possible to retain any of either the one or the other, when they are not of excessive size and still in good health, it is well to do so. Exception should only be made of those that are of quick growth, such, for instance, as Limes and Elms amongst trees, and Laurels (Common) and Lilacs amongst shrubs. Such as these may be lopped—in the case of large trees, to a considerable extent—and the ground around them dug deeply, so as to clear away at the same operation a good quantity of the roots also, which will not be missed when the boughs are removed at the same time. This extension of the roots of trees much impoverishes the soil, making it a difficult matter in the course of years to get shrubs to thrive underneath their branches or within a reasonable distance of them. In such cases the shrubs around the trees should be all removed to a convenient distance, when dealing with those safe to operate upon or worth the labour expended. Common Laurels, and the Portugal Laurel also, are not safe subjects to remove when of large size: neither are overgrown Yews nor Box-trees. Large Aucubas, Hollies, and Rhododendrons move very well when care is taken. Overgrown Laurels should be cut down to within a few feet of the ground, or removed entirely and young ones planted; Lilacs may be treated in a like manner. In both and similar cases, when strong shoots are made the following year, a moderate pruning should be given when the growth is near about completed; this will tend to a more bushy compact plant being again built up.

Even when but little alteration is requisite, it does good to give a thorough pruning every few years, for it will always happen that some kind of shrub or other will develop into a superior plant, and be worthy of retaining as it is, by cutting back those around it to admit light and air. In this way the plant is afterwards seen to much better advantage, and has greater opportunities of future progress. The Yew-tree is often an instance in which such

treatment is advisable; for where it thrives well, it makes a handsome evergreen tree of the hardiest constitution. Trees that were formerly planted, and in all probability intended to remain, as single specimens upon the lawn, will in course of time extend themselves considerably. When these still retain their ornamental character, room should, if possible, be given to them, so that their good appearance may in this way be further enhanced. It may happen that the growth of such encroaches upon a path; instead of cutting the tree, however, the path itself should, when practicable, be sufficiently diverted to meet the case; or, again, some shrubs may by extension of growth have almost filled up what was formerly an intervening space of some extent. The writer had such a case as the latter occur a few years ago, in which an *Araucaria imbricata* of fine proportions was being gradually weakened on one side by a clump of shrubs approaching in their growth too near to it. These shrubs were all removed, and the greater space occupied by the shrubs covered with turf, to the manifestly better appearance of the *Araucaria* in every way, and the retention of its lower branches in a good state of health. This is only quoted as an instance, but many such occur where, by the overcrowded state of the shrubs through past neglect, the garden looks more like a wood than anything else. Alterations like these may be effected a piece at a time; then in the course of a few years the desirable object of sufficient room, both to give good effect and to encourage a healthy and vigorous growth, may be attained without at any time resorting to a radical change.

An overcrowded growth of trees and shrubs has always a tendency to promote an amount of dampness during the winter months that is not at all desirable in any way, and, on the other hand, during the summer season the ground is robbed of an excessive amount of nutritive power. When trees of large growth begin to encroach upon each other, they should be thinned out before they injure one another. This should not be done so much by the thinning of the branches merely, as by cutting down and removing entirely a portion of them. We need not seek very far for examples of excessive crowding and its injurious results; it is to be seen in very many instances, especially in gardens of but moderate size. The appearance in these instances would no doubt at one time have been all that could have been desired; but, for the want of resolution, the proper time for thinning was allowed to pass, with the results consequent thereon. This will at first be seen in a weakened growth; later on the lower branches, unable now to expand themselves further, gradually die off, and the stems, instead of being

well clothed, are left bare, or at the most with but weakly growths.

When trees meet in this manner, and become interlaced into each other, a vast amount of air is excluded, to the certain disadvantage of both vegetable and animal life. The shrubs contiguous thereto will soon suffer by the shade imparted, making an attenuated and weakly growth, with a meagre appearance. Trees of tall and dense growth should not be planted near to the dwelling-house, unless specially required as screens, and even then they should never be permitted to become overcrowded in the slightest degree, or the object for which they were at first planted will eventually be defeated. When a garden is surrounded, or nearly so, with trees of tall growth, unless the space is rather extensive, everything must in time feel the ill-effects. Flowering shrubs will cease to be so floriferous for want of more sunshine to ripen the wood, and during severe winters more injury will be done to plants which, under fair conditions, would resist the inclemency of that season.

In cases where a thorough rearrangement of the shrubs is contemplated—exception only being made of these that are not considered safe to remove, or that can be cut back hard—the ground should be dug deeply to a depth of from two feet to two feet six inches, or even deeper if the soil is good at the depth. In such a case the bottom spit should be brought to the top, to obtain a thorough change of soil; this would be termed trenching “out and out.” When the soil is poor, a liberal addition of manure will be of great assistance, and will pay for the extra labour and expense, the chief point being to get the shrubs well established again as soon as possible, and in advance of the roots of the trees as far as can be done.

In doing this kind of work, it will often happen that a variation can be made in the general outline for future planting, with considerable benefit. Some of the ground could possibly be turfed over, and the shrubs partly planted upon what was formerly the lawn. This will give variety, and be the means of the shrubs often doing better afterwards through change of soil. Any shrub when it is not thriving should be thus treated, the shift from one spot to another often having the desired result. On the other hand, any shrub which has thus far been growing too freely—and, if a flowering one, producing but little flower—may be also moved into poorer soil, which, with the check of removal, will often bring about the desired end.

When a garden has been badly neglected, the shrubs being overgrown to an excessive extent, and a growth of weeds predominating, the best and only effectual way is to allow time before any attempt is

made at a complete rearrangement. When such a garden is taken in hand, all shrubs should be overhauled, and at the proper season, as advised in other articles, a thorough pruning proceeded with; then proceed as before with deep digging and any removals that may be necessary. The turf, if worth retaining for the lawn, should be put in order, and any alterations in its formation seen to; if not worth keeping, grass seed should be sown at the proper season. Time should be given to see what the results will be as regards the shrubs which have been operated upon. Some may die, others may grow away vigorously; meanwhile the ground should be kept clean from weeds, which can be much better effected when no crop is upon it. While all this is going on, the ideas as to future planting can be worked out and decided upon; this will be much better than proceeding in a hurry, to get all completed.

The kitchen garden should also be left without a crop, but deeply dug and afterwards re-dug and manured, then frequently hoed to keep down the weeds. The fruit trees will without doubt be in a bad state; the best remedy when they are overgrown is a hard pruning to encourage a younger growth closer home. It is not advisable to do away with any fruit trees, unless very bad ones, until they have been proven, for old trees will often bear the best as

soon as they are brought round again into a good state. Some sorts also bear better when getting old, not then being so disposed to make a strong growth.

The paths should have a good cleaning, but do not attempt to re-gravel any for the first few months, nor until the weeds have been killed. If there are any old drains that can be made to do good service still, they should be cleaned where necessary, and then tested by being flushed with water. Any alterations to paths should for the time being be left in the rough, no new gravel as a facing being applied till all the other work is done. When the soil in the kitchen and fruit gardens is found to be infested with slugs and wireworm to a serious extent, an extra strong dressing of fresh lime and soot should be given, and repeated after a short interval. All refuse, such as the cuttings from the shrubs and trees, and weeds, should be burned up. The ashes from such a fire can afterwards be turned to good account as a manure, especially for the lawn. Hardy flowering plants of the herbaceous kinds should be divided, and replanted in smaller patches. Any bulbs that may be found should be preserved for future planting. There may not possibly be any indications of some of these upon the surface: in removing soil therefore a good watch should be kept where they are known to exist.

DISEASES OF THE LIVER AND INTESTINES.

THE general symptoms of liver derangement may be recognised without much difficulty. In the first place, the history of the patient may reveal something suggestive. It may be known that he has been addicted to the abuse of alcohol, that he has been in the habit of indulging freely in the pleasures of the table, that he has habitually taken little or no exercise, or that he has resided in tropical climates, or has suffered from dysentery or ague or some similar complaint. The family history is often of importance, and it is especially so when one or more members of the family have died of some disease known or suspected to be cancer. The actual symptoms to which most importance should be attached, are persistent vomiting (especially the first thing in the morning), diarrhoea alternating with obstinate constipation, pain in the left shoulder, a furred or flabby condition of the tongue, and swelling of the legs or abdomen. The fact of the patient constantly passing high-coloured urine, which deposits freely on standing, would also naturally excite suspicion; whilst progressive loss of flesh, accompanied by impaired appetite, would be equally suggestive.

Most sufferers from diseases of the liver are disinclined for exertion, and take little or no interest in even their own affairs. They are apt to be despondent, and to take a gloomy view of life generally. They are rarely regarded as pleasant companions, and even their best friends soon learn to give them a wide berth. They are, as a rule, extremely irritable, and take offence on the smallest possible provocation. They dwell at inordinate length on their own bodily ailments, and are fond of discussing their various symptoms and discomforts. They rarely remain long under the care of any one medical adviser, but rush about from doctor to doctor in the vain hope of obtaining relief. They are known to be uncertain and unreliable, and the result is that no one takes any particular interest in them, or makes any real effort to get them well. They take patent medicines in unlimited quantities, and are at the mercy of any designing quack into whose clutches they may fall. This unfortunate condition of affairs is met with both in men and in women, but is most common in men between the ages of forty and fifty—especially in those who lead a sedentary life.

The functional disorders of the liver are fairly amenable to treatment, but there are many organic diseases of this organ for which there is practically no cure. Cancer, for example, is necessarily fatal, and often runs a very rapid course; and the same, with slight modification, may be said of atrophy and cirrhosis.

In nearly all diseases of the liver the diet needs careful supervision. It should be as simple and nutritious as possible, and particular caution is necessary in the use of alcohol, and even of hot condiments and rich articles generally. Hygienic measures are also of the utmost importance, and the greatest attention should be paid to fresh air and exercise. A town dweller often derives the greatest benefit from a temporary residence in the country, especially if arrangements can be made for him to play lawn-tennis or some other equally active game. A bracing air not infrequently sharpens the appetite, and gives tone to the system. The chief remedies which act directly on the liver are blue-pill, calomel, and grey powder; but these should be resorted to only cautiously, and under medical advice. Purgatives must be regarded with a certain amount of suspicion; for if the system is weak and debilitated, they often do more harm than good. The systematic use of certain mineral waters, such as the Friedrichshall, Püllna, and Hunyadi-Janos, is often attended with the best results, especially if they are taken on a definite plan. All that is required is to obtain one comfortable action of the bowels, and this is ensured by taking the dose, mixed with hot water, in the morning before breakfast. The application of stimulating liniments and preparations to the skin over the region of the liver is frequently efficacious in relieving congestion. Mustard and iodine are suitable for this purpose, but turpentine and cantharides should be employed with caution.

The chief foreign resorts for the treatment of diseases of the liver are Carlsbad, Marienbad, and Homburg, but it must be remembered that the same method of treatment does not suit everybody. It is never safe to take the advice of a friend or fellow-sufferer in the selection of a spa, and the only safe plan is to follow the advice of a physician practically acquainted with the mode of life and method of treatment adopted in these places. The duration of the course, and the time of the year at which the visit is paid, are important factors in obtaining the desired relief. Even on arriving at the spot, the services of a local physician should be called into requisition, for it is only by an intimate acquaintance with the properties of the different springs that errors in treatment can be avoided. Many of the waters are bottled and sent to this country, but it is found practically that these rarely exert the same

beneficial action here. It is reasonable to suppose that the change of scene, the regular hours, the systematic exercise, the restricted dietary, and, above all, the severance of home-ties and the breaking-off of bad habits, are important factors in working a cure. In the following pages serious organic diseases of the liver are not discussed, as it must be obvious that they are essentially unsuited for domestic treatment.

Biliousness.—The exact meaning which should be attached to this term is doubtful. Everyone knows in a vague kind of way what it means, and yet it is difficult of definition. A man says that he is "bilious," that his "liver is out of order," and it is generally understood that he has a headache, that he is languid and depressed, that his bowels are confined, and that he has no appetite. It is a common complaint, and seems to be peculiar to English people. It is generally due to some error in diet and to want of exercise. A man who is accustomed to an active outdoor life is detained in the house by bad weather, or business, or some unusual combination of circumstances, and forthwith becomes bilious; he is miserable, unhappy, and, to put it mildly, not good-tempered. His friends smile, take no notice of his caustic remarks, and suggest a blue pill. It is not a serious condition, but it is disagreeable while it lasts, both to the sufferer and to those who have to put up with his eccentricities. The liver gets the credit of the mischief, but whether that much-abused organ is really responsible is quite an open question.

One of the most potent causes in the production of biliousness is inattention to diet. It is a well-recognised fact that with some people rich sauces and sweets always give rise to derangement of the gastric organs. Alcoholic drinks form another important factor in the production of liver derangement. Wines act injuriously in two ways—in virtue of the alcohol they contain, and as a direct result of the sugar which enters into their composition. Dry wines can often be taken with impunity when sweet wines, and sweet champagnes in particular, disagree. Biliousness is sometimes of nervous origin, and many people are entirely thrown off their balance by any little anxiety or mental disturbance. Biliousness is often accompanied by constipation and a tendency to flatulence. The bile acts as a kind of natural purgative, and when secreted in deficient quantity, the motions become hard and lumpy, the tongue at the same time presenting a characteristic covering of fur. Aching pains in the limbs, and an irresistible tendency to drowsiness, are usual concomitants of this condition.

The treatment presents no difficulty. It is necessary to regulate the diet, and to give up *entrées* and sweets, living on plain well-cooked food—at all events, for a time. Potatoes should be taken sparingly, and wholesome biscuits will be found better than bread. The allowance of alcohol should be strictly limited, and in most cases it is better to give up wine altogether, taking nothing but a glass of whisky and potash at dinner. Beer is entirely out of the question, and should be sedulously avoided. Smoking may be permitted, but in the strictest moderation, and the allowance must not exceed two pipes or cigars a day.

Exercise is an important factor in treatment, and it must be taken vigorously. As to the exact form it should assume, the patient may please himself. Dumb-bells or Indian clubs in the morning are good, or a turn in a gymnasium, whilst later in the day lawn tennis or an hour's run on a bicycle will prove beneficial. A man who has no outdoor amusements would do well to take a course of boxing or fencing medicinally. For people who cannot, or will not, exert themselves, massage may be recommended. The operator should rub the arms and legs, and pummel vigorously over the region of the liver. This form of passive exercise is not nearly so efficacious as that which may be obtained by outdoor exercises. It is essential that the exercise should be taken regularly and systematically, and it should be continued long after the symptoms of biliousness have ceased to appear.

There are many drugs which from time immemorial have had a reputation for the cure of biliousness. One of the best and most popular is blue pill. A five-grain blue pill should be taken at bedtime, followed by a saline purge in the morning. This treatment is very efficacious at first, but after a time it loses its effect. In many cases small doses of mercury frequently repeated are more useful. A third of a grain of grey powder, or a tenth of a grain of calomel, every hour for six hours is invaluable. It should be ordered in the form of "tabloid triturates," which may be obtained from any chemist for about a shilling a hundred. One of the advantages of these tabloid triturates is that the drug is very finely divided by being ground up with sugar of milk, and another is that it is much more active. Podophyllin also is a popular remedy, and this again is best administered in small doses in the form of the tabloid triturates. They contain a quarter of a grain of the resin in each, and one should be taken every quarter of an hour for an hour. An analogous remedy is Euonymin, which must be employed in the same way, a tabloid triturate containing an eighth of a grain being taken every quarter of an hour for a couple of hours. Euonymin possesses

very mild purgative properties, and it is a good plan to take after it half a tumbler of Friedrichshall or Püllna Water diluted with an equal quantity of warm water.

Many people when they are "bilious" take a compound colocynth or compound rhubarb pill; but although these may answer for a time, they are not to be recommended, as they soon lose their effect, and the dose has to be increased. Rhubarb is especially to be avoided, as it contains, in addition to its purgative principle, another substance which is powerfully astringent. Dandelion pills are largely advertised as a remedy for biliousness and all derangements of the liver, but it is doubtful whether dandelion itself exerts much action. It is probable that most so-called dandelion pills are simply blue pills in disguise. In India, where biliousness is common, sal-ammoniac is the most popular remedy. It should be taken in twenty-grain doses dissolved in water three times a day, its nauseous bitter taste being covered by the addition of half a teaspoonful of liquid extract of liquorice. Nux vomica is a good remedy, especially in the morning before breakfast. The tabloid triturates of nux vomica contain one minim in each, and five or six should be taken one at a time at intervals of five minutes whilst dressing. These small doses of nux vomica, by stimulating the intestines to action, often induce free purgation without griping or straining. They seem to answer especially well for ladies, removing not only the biliousness, but the accompanying headache and painful feeling of lassitude.

When a patient is bilious, tonics should not be taken, as they are apt to intensify the trouble, this being especially the case with preparations containing iron or quinine. Baths are useful, and a hot bath containing an ounce of strong hydrochloric acid to two gallons of water is very efficacious. A wooden tub should be used, and not an ordinary metal bath, and the sponge and towels should be well rinsed in plain cold water directly they are done with, or they will soon be in holes.

Congestion of the Liver.—It must be admitted that the expression "congestion of the liver" is used in a very loose way, and often without any accurate or definite meaning. It may be taken to imply that the patient feels dull and depressed, that there is a disinclination for work, that the taste is impaired, that there is little or no appetite, and that the bowels are confined. The causes of congestion of the liver, employing the term in this somewhat comprehensive sense, are easily assigned. In the first place, errors of diet have much to answer for, and are a fruitful source of suffering. A person whose digestive organs are perhaps of not the most

robust type accepts an invitation to dinner, indulges in a variety of food to which he is unaccustomed, and the next day suffers from the effects. It is not so much the excess of food which is taken, as the unaccustomed variety, combined perhaps with an unusual allowance of stimulants. If perchance it should result in a sharp attack of diarrhoea, little or no harm is done; but if, on the contrary, it should be followed by constipation, the sufferer is apt to complain for days that he is out of sorts, and that his liver is congested. Young people who take plenty of outdoor exercise can eat and drink almost anything, but those of more mature years find that they have to be excessively careful. Functional derangement of the liver usually gives rise to disturbance of the bowels in some form or other. The motions are either unusually pale, or, from long retention, become black and lumpy. This latter condition is not uncommonly associated with extreme depression of the spirits. Aching pains in the limbs, and lassitude, are often experienced, and there may be a sharp attack of headache, lasting for many days. Giddiness and dimness of the sight is another common accompaniment, and there may be tingling and pricking sensations in the arms and legs and other parts of the body. Sleeplessness not uncommonly follows, pointing to an over-excited condition of the brain. Slight jaundice sometimes results from an attack of derangement of the liver, but it is not a common accompaniment. Neuralgia occurs more frequently, and a complaint known as "hepatic neuralgia" has long been recognised.

The treatment of functional derangement of the liver is one of great interest. In many cases more may be accomplished by careful regulation of the diet than by the administration of medicines. Patients subject to this condition should avoid richly-seasoned food. In severe cases potatoes, rice, sago, and fruit will have to be given up, and even bread must be taken in the strictest moderation. A dietary consisting chiefly of stale bread, plainly-cooked mutton and beef, white fish, poultry, game, eggs, and a moderate amount of vegetables, with tea, coffee, or cocoa, usually answers well. The quantity, as well as the quality, of the food will have to be considered. Much caution will have to be observed with respect to the form and quantity of alcoholic fluid permitted. Malt liquors, port wine, and champagne, are prohibited. A good sound claret usually answers best, or in its place may be taken at meal-times a little good old Scotch whisky, freely diluted with water. Alcoholic drinks in quantities usually regarded as compatible with, if not actually conducive to health, and *far short* of what is necessary to affect the brain, may undermine the foundations of health by deranging the liver. Even in the case of patients who have been accustomed to indulge

freely, the risk of a sudden withdrawal of stimulants is very small.

Next to a careful regulation of the diet, a free supply of good fresh air is one of the most important elements in effecting a cure. The patient, at whatever inconvenience and loss, should take a holiday, and spend three weeks or a month at the seaside, keeping regular hours, and spending most of the day out of doors. The free use of diluents is also advantageous; and soda-water, seltzer-water, or lithia water, should be taken freely. A good plan, and one which not infrequently proves most advantageous, is to drink a tumblerful of cold water the first thing in the morning before breakfast. Baths, too, are useful, and the action of the skin should be maintained by frequent ablutions of the whole body with tepid water and soap. A Turkish bath taken once a week often does a great deal of good. The occasional use of aperient medicines is advantageous, whether there be a tendency to constipation or not. The Compound Cathartic Tablets are active, and rarely cause unpleasant symptoms. Friedrichshall water, Püllna water, Hunyadi-Janos water, or Carlsbad salts, should be taken frequently on an empty stomach.

With respect to drugs, nothing succeeds better than the mineral acids. Fifteen drops of dilute nitro-hydrochloric acid may be taken in an ounce of compound infusion of gentian three times a day immediately after meals. Tonics, too, are not without value, and many people who suffer from congestion of the liver habitually take a teaspoonful of the ammoniated tincture of quinine in a wineglass of water before meals, or a teaspoonful of Fellows' Syrup of the Hypophosphites after meals. Opium in all forms usually does a great deal of harm in liver derangements, and should be avoided.

Congestion of the liver is by no means an unimportant complaint, for it is apt, if neglected, to lead to gout, diabetes, or Bright's Disease.

Jaundice.—The appearance of a patient suffering from jaundice is very characteristic, and the deep yellow colour of the skin and eyes leaves no possibility of doubt as to the nature of the complaint. The word "jaundice" is derived from the French *jaune* (yellow). The technical name *icterus* is less appropriate, being the Greek word for the golden thrush, a bird with golden plumage, the sight of which by a jaundiced person was believed by the ancients to be death to the bird, but recovery to the patient.

In cases of jaundice the colour of the skin varies from a pale sulphur- or lemon-yellow to a deep olive hue. In exceptional cases the pigmentation has been so marked that the skin has been almost black.

The whites of the eyes are also affected, and present the same peculiarity of colour. The urine is always tinged with bile, and is dark in colour. The motions are hard, light in colour, and are passed with much difficulty. Appetite and digestion are poor, and the patient has little or no desire for solid food. Mentally he is always greatly depressed, and has little or no inclination for exertion. The skin itches, and this is not uncommonly an obstinate and distressing symptom. What is called "xanthops," or yellow vision, is sometimes noticed, but it is not very common.

It is a well-known fact that soldiers wishing to obtain their discharge from the army sometimes feign to be suffering from jaundice. They paint the skin with infusion of saffron, turmeric, rhubarb, or broom-tops, and heighten the colour of the urine by taking rhubarb or santonin. The eyes, however, always remain persistently white, and the fraud is easily detected.

In an ordinary case of jaundice the patient should be put to bed, and made to keep there—at all events, for some days. No solid food should be given, and his diet should be confined to milk and soda-water, with a little beef-tea or essence of beef. A tabloid of grey powder, containing one-third of a grain, should be given every hour for the first day, and then every alternate hour for a couple of days. A simple enema, or the injection of a teaspoonful of glycerine, may be necessary to get the bowels to act. Should the skin itch very much, a little lanoline may be rubbed in night and morning. After a few days tabloids of chloride of ammonium may be substituted for the grey powder.

A simple attack of jaundice will incapacitate the patient for work for three weeks. Should it persist for a longer time, the jaundice will probably be found to be due, not to catarrh, but to cancer or some kind of tumour pressing on the liver. The attendance of a doctor is necessary in the treatment of jaundice.

Gall-stones.—Gall-stones are concretions which form in the gall-bladder or in the bile ducts, and are derived chiefly, if not entirely, from the constituents of the bile. They vary in number, and there may be one, or there may be many hundreds. The fewer the number, the larger the size they attain. Sometimes they are not larger than a hemp seed or a millet seed, whilst, on the other hand, they may be as large as a hen's egg. When they are solitary, they are usually roundish or oval; but when they are numerous, they are angular, and present facets, from rubbing one against the other. They are generally smooth, but sometimes the surface is wrinkled like a peppercorn; or it may be rough,

and covered with little elevations like a blackberry. They are firm or waxy in consistence, and may be readily cut with a knife, or crushed. In colour they may be white, but are more commonly brownish-yellow. They are composed chiefly of a substance known as cholesterine, with more or less colouring matter derived from the bile. They are quite light, and readily float on water.

The causes of gall-stones are somewhat obscure, but their growth seems to be favoured by stagnation of the bile in the gall-bladder. They occur more frequently in middle-aged and elderly people who take but little exercise, than in those who lead an active life. Women are more liable to them than men, and stout people are frequently sufferers.

Gall-stones are apt to give rise to serious consequences. They may set up inflammation, or lead to the formation of an abscess. If they only consent to remain in the gall-bladder, they do comparatively little harm; but if by any chance they are driven into the little duct which conveys the bile from the liver and gall-bladder into the intestine, they cause an obstruction, and give rise to the most intense suffering. The pain produced by the stone in its endeavours to force a passage is excruciating, and in many cases agonising. A patient in this condition is said to be suffering from an attack of biliary colic. After experiencing a sense of uneasiness and discomfort for an hour or two, he is suddenly seized with acute pain at the pit of the stomach, or in the lower part of the chest, coming on in paroxysms, then abating in intensity, only to be renewed with increased violence. The pain often gives rise to vomiting, which is peculiarly persistent and exhausting. Even when there is no actual vomiting, distressing nausea and retching are very prominent symptoms. The patient in a bad attack is unable to remain quiet for even a moment, but rolls on the floor in an agony of pain and suffering. The skin is bathed in perspiration, and there are frequent fits of shivering. The pulse is weak, and may be for a time imperceptible. The bowels are confined, and flatulence is usually experienced. Jaundice is not a necessary complication, but it is often noticed.

The duration of an attack of colic varies much in different cases; it may last only a few minutes or many hours. The cessation of the pain may be due to the gall-stone slipping back into the gall-bladder, or to its making its way through the duct into the intestine, where it can do no harm. When there is only one calculus, and it escapes, the patient has no return of the symptoms—at all events, for a very long time; but if unfortunately it has fallen back into the gall-bladder, or, worse still, if there should be a succession of gall-stones, there is very little prospect of peace, and the attack may be renewed at any

moment. After an attack the motions should be carefully examined, and the cause of all the mischief may be discovered. The simplest plan is to stir the evacuation up in a basin of water, when the stone if present will float up to the surface. It should be examined to see if it is round and smooth, or if it presents facets. If it is round and smooth, it is probably solitary; but if it is faceted, it is one of a number, and other attacks will sooner or later follow. It is almost impossible to mistake the passage of a gall-stone for any other complaint, the very intensity of the suffering sufficing to clear up any doubt on the subject. The colic resulting from a too hearty meal, or from taking indigestible food, is mild in comparison. Renal colic—colic, that is, due to the passage of a stone from the kidney into the bladder—is accompanied by irritation of the urinary organs, blood in the urine, and other equally characteristic and distinctive features.

The treatment of an attack of biliary colic naturally calls for a few words of explanation. The first point is to allay the pain, and to relieve the patient of his terrible sufferings. Nothing is so efficacious for this purpose as a hypodermic injection of morphine; but if there is no doctor at hand to give it, half a grain of morphine made into a pill will answer the purpose, or even thirty drops of laudanum in a little water. In the absence of opium or morphine, twenty drops or more of chloroform inhaled from a handkerchief will usually afford relief. A warm bath is a useful adjunct; or even a large linseed-meal poultice mixed with a third of mustard, and applied over the whole abdomen. Copious draughts of hot water will check the vomiting, and will facilitate the passage of the stone.

To prevent a recurrence of the attack the mineral waters of Carlsbad, Vichy, Ems, or Marienbad may be taken; or, better still, a visit may be paid to one or other of these popular resorts. The diet should be carefully regulated, and the patient should avoid fatty food and, above all, malt liquors. There is probably no more distressing complaint than the passage of a gall-stone, and one experience of it will amply suffice for a lifetime.

Colic.—Colic is due to irregular contraction of the muscles of the intestines, and is usually associated with flatulence and constipation. It is commonly excited by some indigestible article of diet, such as unripe fruit, salt meat, radishes, or shell-fish. Some people are much more susceptible to it than others, and it occurs with greater frequency in women and children than in men. In children it is usually produced by the milk curdling in lumpy indigestible masses. Sometimes it assumes an epidemic form, attacking simultaneously several members of the

household, and is then due to the adulteration of the bread with alum, to the use of copper utensils in cooking, or to the presence of lead in the water. Very small quantities of lead, if taken constantly, will induce colic in the most severe form. It is the most ubiquitous of metals, and may be unsuspectingly introduced into the system in a variety of ways. Many people are so susceptible to the action of lead that they get an attack of colic from sleeping in a room which has been recently painted. Lemonade and soda-water are often contaminated with lead, from the use of patent syphon taps; and water has been known to absorb lead from cisterns and leaden pipes. Artists and painters often suffer from the lead in their paints, and compositors from handling type-metal.

The pain of colic is peculiarly distressing, so that the sufferer not unfrequently rolls on the ground in agony. It is felt especially in the region of the navel, but extends more or less all over the abdomen, shifting its place from time to time. It is often accompanied by vomiting and the expulsion of flatus. It may last only a few minutes, or may persist for hours, or even days. The pain is often cut short by the occurrence of a sharp attack of diarrhoea.

As a rule, colic is very amenable to treatment; but should it last for more than a few hours, the services of a doctor will be required. One of the best remedies is a teaspoonful of sal-volatile in a wineglass of water, or a few drops of essence of peppermint on sugar. Should either of these fail to afford relief, a draught may be given containing fifteen grains of bicarbonate of potassium, a drachm of aromatic spirits of ammonia, ten minims of tincture of nuxvomica, three minims of tincture of capsicum, and a drachm of compound tincture of gentian, in two ounces of water. This should be taken at once, and followed by a three-grain calomel pill, the abdomen being covered with a large linseed-meal poultice, as hot as can be borne. For transitory attacks nothing does so much good as the Soda-Mint Tabloids, one being taken with a little water every ten minutes until relief is obtained. When there is habitual constipation, the "Anti-Constipation Tabloids," containing aloin, strychnine, ipecacuanha, and extract of belladonna, taken the first thing in the morning, will be found useful. When flatulence is a prominent symptom, the patient should take three drops of oil of cajuput on a piece of sugar frequently, or ten drops of pinol in the same way. Possibly alum in the bread may be the cause of the mischief, and it is a good plan to substitute for the ordinary baker's bread wholemeal biscuits, or ginger biscuits made with wholemeal.

When there is reason to suspect that lead is being introduced into the system, an effort should

be made to detect its source, and it should be neutralised by taking three times a day a draught containing fifteen drops of dilute sulphuric acid, a drachm of sulphate of magnesia, fifteen drops of chloric ether, two minims of tincture of capsicum, and an ounce of peppermint water. Iodide of potassium has the peculiar property of eliminating lead from the system, and a tabloid of iodide of potassium three times a day for a week may be tried with advantage. A very popular remedy for colic is chlorodyne; and when nothing else is at hand, there is no objection to taking twenty drops in a little water. Many people endeavour to obtain relief by resorting to spirits, but this is a custom which cannot be too strongly condemned. The relief is at most temporary, and the craving for the stimulant quickly returns. A far safer remedy is the old-fashioned Hays' Essence of Ginger, which may be taken in five-drop doses frequently.

In the case of young children who are subject to colic, the great point is to diet them carefully. If the mother's milk disagrees, the sooner they are weaned the better. Cow's milk may be given, diluted with one-third of water, and sweetened with a little lump sugar. Very often lime-water does better than common water for diluting the milk, the presence of the alkali preventing it from curdling in lumps in the stomach. The addition of a small teaspoonful of the Kepler Extract of Malt to the bottle of milk-and-water often answers admirably, but a still better plan is to peptonise or pre-digest the milk by means of "Zymine Powders," which can be obtained from any chemist. The baby's bottle should be kept scrupulously clean; for if there is the slightest trace of acid, the milk turns sour and gives rise to colic. It may be taken for granted that if a child screams after taking food, or suffers from flatulence, that a change is necessary. Some children thrive well on the different farinaceous foods now so extensively advertised, but they should be used with caution, as the powers of digestion of a young child are very limited. When the motions are light in colour, a third of a grain of grey powder every three or four hours will be found useful. Many doctors give larger doses than this, but small doses frequently repeated are much more efficacious and certain in their effect. It is a good plan to rub the abdomen gently with the warm hand, and the addition of a few drops of olive oil will be found to facilitate the process. The cure of colic is very much a question of diet, and any one who is moderately careful can succeed in preventing a repetition of the attack. (For Biliary Colic, see GALL-STONES.)

Constipation.—Constipation can hardly be regarded as a disease; but when it assumes a chronic

form, it is a very disagreeable and distressing complaint, and is the cause of much discomfort and uneasiness, both mental and physical. The motions are not only passed with insufficient frequency, but they are dry and hard, from long retention in the intestines. Most people who enjoy anything like robust health have at least one evacuation in the twenty-four hours; but, curiously enough, some persons have their bowels relieved at much longer intervals. Cases are not uncommon in which a fair amount of health has been maintained when the calls of Nature have had to be attended to only once a week, or even once a fortnight; and in very exceptional instances the interval has been as long as a month, or even six weeks. Constipation arises from a number of causes, one of the chief being want of exercise. Many people, ladies especially, take no exercise at all, and do nothing to bring their muscles into play; if they go out, they simply dawdle along, looking in the shop-windows. Another common cause of constipation is mental anxiety. If a man is worried and harassed, he often forgets that his bowels require attention, and the matter is postponed until relief is obtained (if at all) with difficulty. Literary pursuits seem eminently favourable to the production of this condition, and many writers, either from want of time or want of inclination, postpone their obvious duties indefinitely. The abuse of purgatives is another fruitful cause of constipation, the bowels being stimulated artificially to action until they will no longer respond naturally.

The consequences of constipation are most unpleasant. In addition to the local disturbance, indicated by sense of heat, fulness, and a tendency to piles, there is headache, with loss of appetite, depression of the spirits, and dyspepsia. A dark rim appears under the eyes, there is a feeling of drowsiness, and the sufferer is incapable of mental exertion of any kind. Amongst the remote consequences are pains in the stomach, colic, flatulence, and in women irritation of the womb.

The first thing to remember in the treatment of the complaint is that purgatives are uniformly injurious. It is a bad plan to attempt to cure constipation by setting up diarrhoea. The patient who flies to purgatives to relieve his bowels may obtain temporary relief, but he will increase the mischief in the long run. Such remedies—or so-called remedies—as blue pill, calomel, and black draught are to be sedulously avoided. Relief must be obtained by strict attention to hygienic conditions, and an endeavour should be made to restore the functions of the bowels by natural means. Early rising is of the utmost importance, and a patient who suffers from constipation should never indulge in a second sleep. He should get up as soon as he is called, and

take a cold bath. Whilst dressing he should drink little by little a tumblerful of cold water. After that he should take a brisk walk for a quarter of an hour, or, should it be wet, devote the time to exercise with the dumb-bells. Then comes breakfast, and at breakfast he should take a good strong cup of coffee, with a fair allowance of wholemeal bread and marmalade. A useful adjunct is a plate of either porridge or hominy, to which treacle may be added if desired. After breakfast there is no objection to a cigarette, and then the patient should retire for at least twenty minutes. If the first few days his efforts prove unsuccessful, he must wait patiently.

There are many remedies which prove of the greatest value in the treatment of constipation. One of the best of these is *Cascara Sagrada*. One or two of the tabloids, containing two grains in each, should be taken the first thing in the morning. The great advantage of the cascara is that it acts well and pleasantly, and that as time goes on the dose need not be increased. Another good remedy is *nux vomica*. Ten drops of tincture of *nux vomica* are added to half a tumbler of cold water, and this is sipped slowly whilst the patient is dressing. It stimulates the muscular action of the intestine; and as soon as breakfast is over, it will in all probability have the desired effect. The result is due partly to the action of the *nux vomica* and partly to the cold water. A tumbler of cold water alone, as already stated, often proves effectual. Some people who object to the idea of taking cold water, put a few cloves in a glass over-night, pour on some hot water, and drink the infusion in the morning. Many of the natural aperient waters—such as the Friedrichshall and Püllna—are useful, but they are certainly nasty. They should be taken tepid, half a tumblerful being mixed in an equal quantity of boiling water, and sipped slowly whilst dressing. An excellent combination is aloin—the active principle of aloes—strychnine, ipecacuanha, and extract of belladonna. These are the ingredients of the “Anti-Constipation Tabloid Triturates,” one of which may be taken at intervals of a quarter of an hour for an hour before breakfast. Trousseau’s treatment has always been a favourite in this country. It consists of the administration of belladonna according to certain rules. He usually ordered pills containing a sixth of a grain of the extract of belladonna, with the same quantity of the powdered leaves. One of these pills is taken daily, fasting—in the morning by preference, rather than in the evening. The number of pills must be increased daily, but should never exceed four in the twenty-four hours. Whatever the number of pills taken, they must all be swallowed at the same time.

Trousseau, in one of his lectures, says:—“By calling to mind the similarity of the properties of belladonna and tobacco you will see how it is that many men never have an evacuation unless they smoke a pipe or cigar immediately after a meal. Although by many people it is not considered very proper for women to smoke, I almost every week advise ladies to try the effect of smoking a cigarette to aid in overcoming constipation which may have proved inveterate under every hygienic treatment.” Dr. Ringer says:—“Smoking acts on the intestines as a slight purgative, and no doubt a pipe or cigar smoked after breakfast is often sufficient to ensure an easy and satisfactory relief of the bowels, and is perhaps a practice not without advantage in habitual constipation.”

Many people obtain relief by using an enema every morning after breakfast. It necessarily involves a certain amount of trouble, but it is less injurious than taking purgatives. A simple enema of cold water will usually answer admirably, but a decoction of starch is sometimes preferred. The injection of a teaspoonful of glycerine, by means of a little syringe made for the purpose, often proves most efficacious; and glycerine administered by the mouth is not without laxative properties. The custom of eating fruit when the bowels are confined is a good one, the pips or small particles acting as irritants or stimulants to the mucous membrane of the intestines. The juice of a couple of oranges in a wineglass of water, taken about eleven in the morning, is a remedy of no mean power. Many people who dislike other kinds of fruit have no objection to ripe bananas, which are always to be obtained in good condition in London. The practice of rubbing the abdomen is useful, as the pressure makes the intestines contract, and serves to pass on their contents. The proceeding should be conducted scientifically, and with due regard to the anatomical arrangement of the parts, or it may do more harm than good.

When constipation resists the ordinary modes of treatment, it must be considered whether it is not due to some general constitutional disturbance. It is common in young women who suffer from anæmia, or poverty of blood, and the best remedy under the circumstances is iron. In children it is occasionally due to stricture, strangulation, or the impaction of foreign bodies in the intestines. Fortunately these conditions are rare, but in case of doubt a doctor should be consulted without delay, as it is possible that an operation may be required.

Diarrhœa.—Diarrhœa may arise from a number of causes. In the first place, there is the common form of the complaint resulting from over-repletion

of the stomach, and from the ingestion of food which is not wholesome, or else not suitable to the requirements of the individual. The ingesta irritate the mucous membrane, and probably the walls of the intestinal tract, the secretions being poured out in unusual abundance, to get rid as quickly as possible of the offending substance. The symptoms of this condition are well known. There is nausea with flatulence, and griping pains in the stomach, succeeded by stools of unnatural appearance and odour, and of fluid or watery consistence. The tongue is furred, the breath is foul, but the disorder is attended with little or no fever or elevation of temperature. An attack of this kind frequently follows a dinner at which foods and wines of various kinds have been partaken of freely, and perhaps without much discretion. Mental anxiety is another common factor in the production of diarrhoea, and the slightest disturbance of mental equilibrium will in many people affect the bowels.

In addition to the ordinary simple diarrhoea, there is the diarrhoea which is a common accompaniment of consumption, and there is a form of the complaint which is the forerunner of typhoid and other fevers. There is also what is called in this country autumnal diarrhoea, which is often so severe as to simulate an attack of cholera. This form occurs most commonly in the month of August, and is frequently attributed to the heat, although probably the custom of eating fruit at this particular time of the year may not be without its influence. In some cases it arises undoubtedly from the inhalation of sewer-gas, the drains in dry hot weather being very insufficiently flushed. This autumnal diarrhoea sets in suddenly, usually in the midst of apparent health, and the evacuations are so frequent and copious that in the course of a couple of hours the patient may be in the utmost danger, and present all the symptoms of collapse. Sometimes diarrhoea is met with in a chronic form, and is not uncommon in "old Indians," whose health has deteriorated by long residence in tropical climates. There is one particular form which is known as the "white flux," from the light colour of the stools. In all cases of chronic diarrhoea the possibility of poisoning must be borne in mind. The introduction of the poison into the system may be perfectly accidental, as, for example, when the rooms of the house have been hung with arsenical papers. Hundreds of cases have been traced to this source alone, and it must be remembered that the fact of the paper being guaranteed "free from arsenic" is no proof of its being innocuous.

The treatment of an attack of diarrhoea depends very much on its cause. When it is due to the presence of some indigestible article of food, nothing

can be better than a tablespoonful of castor oil, or a couple of five-grain rhubarb pills. The ordinary stock diarrhoea medicine dispensed *ad libitum* at most of our hospitals consists of two drachms of dilute sulphuric acid, one drachm of tincture of opium, a drachm and a half of chloric ether, and eight ounces of water, the directions being that two tablespoonfuls are to be taken three times a day, with an extra dose after every loose motion. Another favourite prescription is chalk mixture, which contains prepared chalk, gum-acacia, syrup, and cinnamon water, and is given in ounce doses as often as may be necessary. When there is a suspicion that the attack is due to bad smells or defective drains, camphor is the best remedy. The ordinary spirit of camphor is not strong enough, but the essence of camphor, which is a saturated solution of camphor in alcohol, answers admirably, three drops being taken on sugar every quarter of an hour until the symptoms subside. For summer or autumnal diarrhoea it is very useful, the patient being given in addition a tumblerful of cold milk with two tablespoonfuls of pale brandy. For the diarrhoea of consumption nothing can be better than ten grains of compound Kino powder, or three or four tabloids of carbonate of bismuth taken with a little water. When there is much pain over the region of the abdomen, the application of a large linseed-meal poultice may prove useful.

There are certain special remedies for this complaint which may be employed with advantage in particular cases, the indications for the administration of each being set forth below:—

Camphor, administered in the way already indicated, does most good when the diarrhoea sets in suddenly, when the motions are dark in colour, and the extremities are cold and livid. It is always a safe remedy to begin with, and often cuts short an attack very speedily.

Mercury is indicated when the stools are pale, clayey, and offensive; or when the motions are green in colour, slimy, and tinged with blood. It may be given in two forms—either as the third of a grain tabloid triturate of grey powder, or as the one-hundredth of a grain tabloid triturate of perchloride of mercury. These tabloid triturates must be administered frequently—say, one every ten minutes for an hour, and then hourly for five or six hours, or until the motions become firmer and less frequent.

Podophyllin is indicated in morning diarrhoea, when the motions are high-coloured, and their passage is accompanied by sharp cutting pain. The tabloid triturates of podophyllin resin contain a quarter of a grain in each, and one should be taken every hour.

Arsenic is useful in many forms of autumnal diarrhœa, especially when the motions are watery, slimy, and green or brown. It is especially indicated when the diarrhœa occurs immediately after eating or drinking. The tabloid triturates of arsenious acid contain one-hundredth of a grain in each, and one should be taken every hour until the diarrhœa is checked.

Pulsatilla is said to be most efficacious when the diarrhœa arises from over-indulgence in rich indigestible food, such as duck or pork. Two teaspoonfuls of tincture of pulsatilla should be added to a tumblerful of water, and of this a teaspoonful is taken every five minutes.

Colocynth is found to answer best when the diarrhœa is accompanied by pain and griping. There is no very convenient form of giving colocynth in small doses in the British Pharmacopœia, but most chemists keep the tincture of colocynth of the Prussian Pharmacopœia, the dose of which is three drops in water every ten minutes until relief is obtained.

Nux vomica is useful for diarrhœa alternating with constipation. Ten drops of tincture of nux

vomica should be added to a tumbler of cold water, and of this a tablespoonful should be taken every ten minutes for a couple of hours.

Opium is a standard remedy in all kinds of diarrhœa, and it matters little in what form it is given. Some doctors prefer the compound soap pill, whilst others think highly of the pill of lead and opium. Five grains of either should be given every four hours. The tincture of opium or laudanum is given in doses of from twenty to thirty drops in a little water or milk. Chlorodyne is a good remedy, and has the great advantage of being procurable all the world over.

People who are subject to diarrhœa should be careful about their dietary, and should be especially careful to ascertain that their drains are in proper order. The occurrence of periodical attacks of diarrhœa in members of a household almost always means that the drains are wrong. The patient should be careful about his clothing, and the custom of wearing a flannel band over the abdomen is not a bad one. Wines and spirits should be taken in the strictest moderation, and a certain portion of each day should be passed in the open air.

THE BIRD - C A G E .

THE study of the tricks and manners of birds, out of doors as well as in, affords pleasure to many thousands in this country, both young and old. A cage-bird in a family, whether it be a gay and beautifully plumaged-foreigner, a bright-eyed song canary, or even a modest little linnet, soon makes itself a friend to every member thereof. Happiness is somehow or other infectious, and we cannot long be witnesses to the joyousness of a well-cared-for bird—albeit its cage may be but a gilded prison—without feeling the better for it. The possession of a bird often proves a real boon, mentally speaking, to a young person. That small feathered dependent thing really has the power of drawing a child nearer to nature. It cannot but teach him or her to reason, and it is true that love for a pet—especially perhaps a bird-pet—gives a kind of education that can be got in no other way. To an invalid, on the other hand—more particularly one who has to spend long months in the same room—the companionship of a bird is not only very delightful, but it serves to while away many a weary hour, and thus does incalculable good. No home, in our opinion, seems complete without a bird, any more than without the harmless, necessary cat. That puss is not always harmless where the canary is concerned may be true

enough; at the same time, it is no difficult thing to train her to respect the cage.

The birds kept as pets are easily divisible into three sections, *Canaries*, *British birds*, and *Foreign birds*, the latter including the parrot family. We here have a little to say about each.

Canaries.—The question how and where to procure a good canary is one of some importance. It is, too, one which includes a few others, such as the age at which to buy, the kind of bird to buy; and, if it is to be kept as a pet and songster, how to be sure of getting a male bird. The question of price is one that also deserves some consideration. The act of buying a good bird is not so simple as it may appear. It may be easy enough for a dweller in town or city to enter some large bird-shop and state his wishes. He may, or may not, get well served. He sees scores of canaries on every side of him, and they nearly all look bright enough and taking enough; but the babble of bird-voices is so great that it is often impossible for a novice to say which would appear to best meet his requirements. He gets bewildered, and ends perhaps by purchasing a bird at the recommendation of the shop-lad, and on reaching home may very likely rue his bargain. The newcomer

very quickly takes to its fresh quarters, eats with avidity, perhaps looks with indifference on everything and every one around it, but its song is only a peevish chirp. Now if it was a songster that was desired, the purchase of such a bird was simply money thrown away, and there is considerable disappointment in the family in consequence. If our heart is set upon a canary pure and simple, as the family songster, and if we know little about birds, it is best to take with us to the shop a friend who knows, and who is used to picking out a particular song from the babble of a roomful. It is difficult for an amateur to tell the sex. The male bird is more sprightly, bold, and gay, and also more upright or erect in carriage. The head is rather larger, and the voice, even when chirping, is more thrilling. Then there is the song. This last in *very* young birds, however, will not be of much account; but there is the effort there, at all events, the desire and earnestness, and the swelling of the neck. If a friend who knows is not forthcoming, the best plan is to go to a shop which receives song canaries from Germany, as most good ones do, towards the end of the year, when they come over, and ask for a good singer to be sent up to the house on approval. This will ensure a singer, and as a rule these German canaries are far superior to any English-bred birds, which are bred for quite other properties, to fancy points of form and colour.

The prices of good young canaries vary, but half a guinea, or even less, would be a fair price to pay for an English one. As regards the *singing*, however, of English-bred birds, a mule is often better than a canary. On this subject a recent writer makes the following observations: "I invariably recommend to all those who appeal to me for an opinion as to the best kind of bird for singing, a dark mule, bred between a goldfinch and a canary, or between a linnet and canary, as they are very handsome, hardy, and lively, and when they happen to get smoked or soiled, they do not show the dirt like a yellow, buff, or pied canary; besides, their song is more mellow and less shrill. They are usually long-lived birds. A male goldfinch mule is easily distinguished from a female by the deep orange colour that encircles the beak and emblazons the breast after it has moulted. In the female the colours are much paler, and have a sort of washed-out appearance."

A German canary, "good" according to English ears, can also be generally obtained for ten shillings; but special songsters cost more, and indeed the best never leave Germany, but are bought up at as much as £5 each. These, however, are few and rare specimens, carefully trained to sing to a high standard. The German canaries come over in small wooden cages; and two cautions are necessary about

them. They have been used to have seed and water *inside* their cages, and this must be continued in the new cage until they have learnt to put their heads through, tempted by morsels of green food, else they will starve with food by them. Secondly, they have mostly been bred in a rather warm but uniform atmosphere, and must therefore be shielded from cold, or changes of temperature, till they are well acclimatised. To hang any bird high up in a window, where it gets cold draughts alternated with hot burnt gas at night, is cruel and injurious; but it is almost certain death to a good song canary.

The Canary Cage.—Whatever kind of bird may have been chosen, the cage should be quite ready for it on its arrival at home. Every one likes to see a beautiful cage hanging in a room, but the most elegant are not always the safest for the bird. Brass cages are really dangerous, owing to the poison formed on the bars when they get wet or damp. The enamelled cage is better, only it should be borne in mind that a great many paints are also poisonous; and if the bird can pick this off, it may be fatal to it. There is a good deal to be said in favour of the ordinary wood and wire cage. However, one thing is important, it should be *large* enough, especially if the bird is to be constantly confined therein.

Liberty for Birds.—A bird, whether it be a canary or ordinary British bird, such as the starling or linnet, will live longer, and be ten times more healthy if it is allowed a certain amount of freedom every day. To accustom a bird to this, it should be bought very young, or reared from the nest. We have known starlings, for example, so tame and so much to be trusted, that they accompanied the owner on his daily walks. The bird must be tamed by kindness. It should know and love its owner, and there should be no one else in the room when the cage-door is opened for the first time, and the bird is invited to come out. If the cage be well plenished with good food and some little dainty, it will soon return of its own accord: and in time it will come to look upon its cage as its place of refuge, to fly to on being in the least alarmed.

Birds and the Cat.—A cat, more particularly if brought up with birds from its kittenhood, is easily taught to know and respect them. The canary, too, if trained to fly about the room, gets quite familiar with puss, and this very trustfulness may really be its salvation. There is no need of treating the cat cruelly. She can be better trained by gentleness and firmness. The cage is, of course, first put on the floor, and young pussy watched. A lesson of this sort every day for a time is usually

sufficient, and the cat soon comes to know that the bird is private property and sacred.

Management of the Song Canary.—When the bird is in ordinary health, the more plainly it is fed the better. The usual mixture is what is called black and white canary seed, the black being good summer rape. Of this, one part is added to two of the other. It is important, however, that the seed be good and clean—that is, free from dust and grit. The canary seed should be fat, glittering seeds, and before putting it in the tin of a morning, not only should the tin itself be cleansed, but the seed should be put upon a piece of white paper, and the dust or grit, if any, blown away or removed. In addition to these seeds, a little green food must be given, fresh every day, but not damp. The best are probably plantain, ripe groundsel, ripe chickweed, a little lettuce or watercress. See that the rape is what it professes to be. As to dainties, *the less of these the better*. We may, perhaps, make an exception in the traditional morsel of sugar or crumb of sweet biscuit, but a bird will not keep long in song that has much of either. Water should be given fresh every morning, the little glass fountain being previously well rinsed out. Soft filtered water is best by far. A great many ailments are induced by hard water. In the wild state birds drink the rain-water from the leaves. This is pure, and contains, of course, no hardness.

Sand is another important *sine quâ non* of health. It should be rather coarse or gritty, and very clean. Perhaps washed sea-sand is as good as any. The bottom of the cage should always be thickly strewn with this immediately after the cage is cleaned in the morning, a stock being kept in the house for the purpose. The owner of the bird should see to its comforts *every morning* before breakfast. If left till afterwards, it is frequently forgotten.

A song canary will not do well for any length of time in a stuffy, badly-ventilated room. *Fresh air* is essential to health. Another thing that tends greatly to keep the bird in health, or indeed any bird, is what we may call the *sun-bath*. On fine days the cage should be so hung that the sunshine shall penetrate the cage; but at the same time it must be remembered that too much heat is very dangerous, so one-half of the cage should be invariably covered over with a cloth. This cloth comes in handy in several other ways—at night, for example; more particularly when the temperature is low, or likely to be. On such occasions the cage is to be covered quite over, but in summer a part should always be left open. The cloth may be required also at times when anything is being done in the room likely to frighten the bird. Some birds are naturally timid and easily

alarmed. When they are so, it is useless trying to tame them; the heart is weak, and they need extra gentle treatment. We have known a bird of this kind almost frightened to death by some one, while sewing, tearing a piece of linen down the centre. Those who own song canaries are not long in finding out that they have many little “human” weaknesses, and are jealous, pettish, peevish, cross, or loving, as the case may be. Such little moods ought to be humoured if we are to have our songsters thoroughly tame. *À propos* of fresh air: the bird in the winter’s evening is too often hung in a position we have already condemned as prejudicial to its health, in a room *where gas is burning*. If the bird must be in this room, the cage should be lowered and partially covered up. Smoke, steam, and all sorts of vapours tend to injure the health slowly, or, indeed, to cause illness and loss of voice.

A forenoon bath daily in fine weather is an excellent preservative of life and voice in the song canary. A saucer makes as good a bath as any, the water being clear rain-water. It is usually placed in the cage; but if, as we have recommended, the bird has been tamed thoroughly, and allowed its freedom for a time every day, the bath should be placed on a chair or on the floor. The bird will come to look upon this as a very great luxury, and the cage remains unsoiled.

Breeding from a Single Pair.—There is a sort of cage, common now in this country, called the German breeding-cage. It does not cost much—about seven-and-sixpence for a good one—and it may be procured at almost any bird-shop. It has one large compartment and a small, with a wire partition between them. It is extremely handy as a parlour cage or workshop cage. In Germany you will find birds bringing forth their young in these cages close beside the chair where some tradesman is working, with perhaps people passing out and in all day. This method of breeding accords, in our opinion, for the tameness of German canaries, compared with our own. However, in pairing two birds in this cage, the male is first placed in one compartment, the female in the other, and as soon as they appear friendly—which may be known by the cock feeding the hen—the wire partition is withdrawn and both compartments thrown into one. Having had one nest of young ones, if the hen should evince an inclination to lay and sit again before the young are fit to feed themselves, these last are partitioned off, and the male will feed them through the bars. Breeding from a single pair of birds like this in the parlour is exceedingly interesting. No very extensive knowledge of bird life is necessary to ensure ordinary success, only certain particulars about the care and

feeding of the birds should be remembered. The male bird *may* be left in the cage after the hen begins to sit, but he may show destructive tendencies towards the eggs. When hatching, the birds require a somewhat more nutritious diet, and therefore a supply of egg and biscuit-crumbs is given them, as well as the seed. This should be made every day, so as to be fresh. Two parts of lunch biscuit to one of hard-boiled egg is pounded up in a mortar, and about two teaspoonfuls given every morning. Of course green food must not be forgotten while the birds are breeding, nor any other essential. It is usual to remove the eggs one by one as they are laid—substituting a nest-egg made of bone, and procurable at the bird-shops—until three are laid. The eggs are then returned, and hatching goes on for thirteen days. As to the nests themselves, we think those sold with the cage recommended are as good as any. If the hen wants to sit again, she has a fresh one. But some building material may nevertheless be placed between the bars, a portion of which she may use.

There are many little troubles connected with breeding from even a single pair of canaries. Not the least of these may be the presence of minute vermin in a cage, which, living in crevices, come out at night, and torment the birds very much. It is far easier to prevent than cure this plague. It can attain no great dimensions in a new cage, and after this is done with for the season, it should be scalded, washed, and most thoroughly disinfected; this same process ought to be gone through before it is used again a second year. Keating's Insect Powder is also useful. A *sine qua non* of successful breeding is to have the birds *young* and *healthy*; nor should they be paired before the middle or end of March. The hen sometimes sweats the young by sitting too closely on them. This is a sign she is weakly, and a rusty nail put in the water will do good. At the same time the young birds may in a measure be protected by placing an arrangement of, say, a couple of thin sticks just over the birds, so that the hen cannot get so closely down. Ill-health will cause a hen to neglect her young, but this is not very common. If she plucks the young, they will have to be removed to another compartment, and placed next the bars, so that they may be easily fed by the cock.

As to what is termed weaning the young birds, after they are old enough to leave the nest they may be partitioned off, and will be fed by the cock, the egg-and-bread-crumbs food being still continued. Crushed seed is, however, now put in their cage. It is a mixture of canary, linseed, and millet, which, after many ineffectual attempts, they will be able to help themselves to. In about a week they will be

tolerably independent; and as soon as they can feed themselves, they may be removed to another cage, and this should be as roomy and comfortable as possible.

There are many outs and ins of breeding from a single pair like this in a parlour cage, which experience alone will teach one. The one thing needful is attention, and this must be constant.

Ailments of Canaries.—There are unfortunately a good many of these, which, considering the rather artificial life the birds lead, is hardly to be wondered at. Nevertheless, when we remember that most of them are caused by neglect of some kind or another, it is plain that these are preventable by ordinary care. A canary does not make the best of patients. It is not easy to handle the little creature when ill without injuring it; so that for the most part, when medicines have to be given, we place them in the drinking water. We believe that errors in diet are the cause of the majority of the bird's illness; such, for instance, as what are called *Apoplexy* and *Asthma*. The former is usually a fit, from which, if the cage and the bird itself are carried to the fresh air of the window, it may speedily recover. We cannot approve of the plan of letting it whiff ammonia. But the head may be bathed in cold water, being simply damped; the air blowing in on it will do the rest. A plainer diet—it has very likely been having dainties—green food, and a pinch or two of Glauber salts in the water may be sufficient to prevent another fit. But better care of the bird must be taken in future.

Asthma is often incurable. It is most common in pampered birds, but their owners do not seek for advice until the disease has fairly established itself. Here, again, for a cure we would trust more to treatment than to drugs. The cage must be hung in a warm and comfortable but well-ventilated room, and be partially, not wholly, covered up at night. If weak at all, egg-and-bread-crumbs diet must be for a time added to its seed food, and the system should be kept gently open by mixing a small teaspoonful of carbonate of magnesia in the drinking water, or a little treacle and glycerine. The best medicine is one sold at many bird-shops under the name of Tibbs' Canarydyne.

Consumption may be mistaken for asthma, but here the symptoms are almost continuous instead of being periodic. They are at first those of *catarrh*. It is well to treat colds as if there was the danger of them running into consumption. Change the diet to one more nutritious. Keep extra warm. Indeed, warmth is a very great factor in the cure of nearly all bird ailments. Give once or twice about two drops of warm castor-oil to act fairly well on the bowels.

Put about twenty to thirty drops of paregoric in the fresh drinking water every morning, with a teaspoonful of glycerine, and the same of gum-arabic solution. But watch the condition of the bowels. After a week, iron—say, twenty drops of the tincture of the perchloride—may be substituted for the other remedies. A little crushed hemp and maw-seed may do good. The same treatment will do for *loss of voice*, although, if this comes slowly on, it is sometimes due to fat. Plain diet and green food will then be necessary, and all dainties, even to the lump of sugar, withheld.

Another ailment brought about by neglect in feeding, by bad water, stale or too damp green food, as well as by exposure to draughts, is *diarrhœa*. The simplest and best form of treatment is to remove the bird to a fresh cage, to keep in a warm place, covering the cage half up, to feed on grated egg and stale bread-crumbs, mixing it with a little chalk and a little charcoal. Stop the green food. After a day or two add iron in some form to the drinking water. *Constipation* is the reverse of *diarrhœa*. Put glycerine in the water. Give several kinds of green food, also a slice of sweet apple or boiled carrot. Dandelion is very good, the young leaves but do not give lettuce, and avoid maw-seed.

Bowel derangements in the canary should always be looked upon as serious, for they are apt to run on to, or be but the preliminary symptoms of, severe *inflammations*, from which there is seldom an escape.

Surfeit is a kind of skin complaint. The bird loses its feathers in part, and there is slight eruption. A plain diet is indicated, with abundance of green food. A little chlorate of potash and glycerine should be put in the drinking water, and the bald parts anointed with the finest oil.

Cramp may be induced by indigestible food, or result from cold, such as exposure to draughts. Give the bird a few drops of castor-oil; add to the water some gum-arabic and a few drops of paregoric. Put the cage in a comfortable place, and feed rationally.

The bird's *claws* sometimes want cutting. Do so with a pair of sharp scissors, but not too closely. *Sore feet* is a most painful complaint. It is generally caused by an unclean cage or dirty perches. The feet must be scraped or brushed, and then washed in lukewarm water. Turn the bird into a clean cage, after anointing with cold cream.

Moulting.—Although this is not a disease, still many birds come through the moult badly, and in every case they should be looked upon more or less as invalids for the time being. Late in summer or early in autumn is the time, and the first signs to an observant eye will not be loss of feathers; for before this the bird evinces a good deal of restlessness,

and may be partially off its feed. There is a certain amount of fever about it. Loose feathers will soon be found about the bottom of the cage. A little chlorate of potash may now be put in the water every morning for three or four days. At the same time some maw-seed will do good, lettuce-leaves, plantain if ripe, and a little ripe chickweed. The object is to cool, but keep up the system. If the new feathers shortly begin to come, little else will be necessary. If the bird continues dull and mopes, egg-and-biscuit-crumbs food will be necessary, and a tonic in the shape of a few drops of tincture of iron put in the water daily. If at the commencement the bowels seem confined, a senna leaf should be put in the water, and a pinch or two of Glauber salts. But this must not be continued long. Extra warmth and protection from draughts are most essential at this time, especially at night; but the fresh air is good for the bird, so is a sun-bath, only one must not forget to cover up one half of the cage. It should be mentioned, however, that many breeders moult their birds in darkened rooms, for the sake of the colour. Whether this plan be correct or not, it certainly is not necessary so far as our parlour song canaries are concerned. In this case our main object should be to guide them through the moult as quickly and as healthfully as possible.

British Birds.—Probably no country in the world possesses a more varied wealth of bird life than is to be found in the British islands. With few exceptions, our birds are not clad in the splendour and extravagance of colour found among those belonging to foreign lands; but what they lack in beauty they amply make up for in song. Indeed, many of our best songsters are dressed in the plainest garbs: as instance the nightingale, the black-cap, and other warblers, the thrush, the larks, and linnet. The goldfinch and bullfinch, and even the chaffinch, are certainly beautiful birds, and the robin will pass; but compare any of them in plumage to the Virginian nightingale, the oryx, the fire-fiend, or almost any of the hundred and one species of parrakeet we find in the bird-shops, and British beauty is paled at once. But music remains. Yet, although song is the principal charm about our own country's birds, they have much else to recommend them; indeed, in the choice of a bird there is hardly any taste that may not be gratified.

Birds kept for their Song.—The Nightingale certainly should have first place. The males arrive in this country about the first week in April, and are then often caught for sale. During the nest-building time they sing by night and day, and all through the season of incubation, after which we

hear but little of them. The nightingale's cage has the top and back of wood, the bars of osier, and the bottom—one that can be slid in and out—is covered with paper, the sand being put in a drawer. The bird likes plenty of privacy, so the cage is a shady one. The food is of various sorts: shredded raw meat, or boiled mutton cut fine, chopped egg, ants' eggs mixed with meat and a little German paste, beetles, meal-worms, gentles, and insects if they will eat them. Some give crushed hemp, this, we believe, does harm. In some cases the German paste may be omitted and lean meat given, chopped up with a portion of hard-boiled egg. But everything must be fresh, and only a small portion prepared and given at one time. The young ones are fed similarly, with the addition to the meaty paste of crushed beetles and ants' eggs, and now and then a little sop of bread and milk. In fact, as the food of the nightingale in the wild state consists mostly of insects, caterpillars, worms, ants' eggs, &c., we try to give it in confinement a diet as nearly like this as possible, and containing the same food-constituents.

The *Blackcap* is a charming bird and beautiful songster. The cage is the same as that for the nightingale. It should have plenty of water for drinking and bathing, and the food may be egg and bread-crumbs, German paste, fruit in season, dried fruit (such as currants and elderberries) in winter, flies, spiders, meal-worms, and gentles, with probably a little scraped fresh meat. In fact, the bird is fed and treated much as the nightingale is. The same may be said for the *White-throats*, the *Garden Warbler*, the *Robin*, the *Redstarts*, the *Stonechat*, the *Whinchit*, *Wheatear*, other *Warblers*, and the *Wrens*. But each and all of these require a goodly proportion of flies and other insects, and probably just as little meat as it is possible to give.

The principal *Thrush* kept in captivity is the *Mavis*, or *Turdus musicus* of the naturalist. The cage must be tall and roomy, with cottage roof, and wooden back and wooden bars, the perches being from front to back. The bottom is a drawer, and on this sand must be sprinkled freely, and the whole cleared every morning. If well attended to, and accommodated with plenty of fresh air, sunshine, and an occasional bath, no bird makes a happier or more pleasant pet than the song thrush. They are fed on a dough of pea-meal or ground oats (called fig-dust), made into a stiff paste with a little milk and water; occasionally a little minced or scraped raw meat, fruit in season, grocer's currants, worms, and snails. They must have a stone placed in the cage to smash the shells. If the bird droops and ails, some change of food is desirable, such as egg and bread-crumbs and a little crushed hemp. For constipation, from which the blackbird as well as the thrush occasion-

ally suffers, give meal-worms and spiders dipped in olive-oil, and supply a larger proportion of raw meat and snails.

The cage for the *Blackbird* should be equally large, but is usually open all round; or it may be the wicker cage sometimes used for starlings and thrushes. Whichever it be, it must be kept scrupulously clean, and it should not be forgotten that this bird is very fond of bathing. The song of the blackbird is remarkably sweet, flute-like, and mellow, while, in addition to his own wild notes, he is capable of imitating the songs of other birds. The food is similar to that for the thrush, but give plenty of insects, slugs, caterpillars, and fruit in season.

The *Larks* one and all make excellent singing cage-birds. The cage is a box with a circular barred front, and in this bow-window is placed a nice green turf. They do not require perches, but should have plenty of sand and dry road gravel. This bird is very happy in captivity, and is hardly ever ailing, if properly looked after, and the cage hung out of doors in fine weather; they like to see the sky, even if they cannot soar in it. The usual food is German paste, stale buns broken small, bruised hemp (not much of this) mixed with bread-crumbs, bruised oats, scraped meat, hard-boiled eggs, meal-worms, small garden worms, and gentles. Tit-larks and Meadow Pipits are nice songsters. They are fed similarly, and like a bath of sand and wood ashes. These birds all do best when reared from the nest.

Goldfinches may be hand-reared from the nest, and do remarkably well as song birds. The music is very sweet and clear. The young are fed on a sop of stale bread, with a little crushed hemp and mawseed, and also on hard-boiled eggs finely minced. The young of the *Bullfinch* may be fed similarly. Great pains is taken in this country, but especially in Germany, in teaching this beautiful bird to pipe tunes. To do this, the tune may first be whistled over to him to excite his curiosity, and this should be frequently repeated, but the bird must be taught note by note, and bar by bar. Or a bird organ may be used. The sooner young birds are begun with their lessons, the better. The food for both goldfinch and bullfinch is similar, consisting of canary-seed, rape, hemp (sparingly), oat grits, a little lettuce seed, and maw, with the ordinary green food. The *Linnet* is called the brown, grey, or rose linnet, according to the plumage, which varies with age and the season. The male after the second moult in his wild state has a rosy-red hue on breast and head, which gains for it the name of rose linnet. The song is very pleasing, and the bird is withal a happy, healthy little fellow. Its food consists of the ordinary seeds, and it is sometimes particularly fond of hemp—which, however, is much too stimulating.

In fact, as regards food, the linnet is inclined to be somewhat fastidious.

Birds kept for Amusement.—Among these we need only cursorily mention hawks and owls. Both should be kept either in very large cages, or, which is better, allowed their freedom to a great extent. Like other birds, they of course require water and gravel, and their food consists of meaty scraps (that can be had from the butcher), and chicken hearts, necks, gizzards, &c. (procureable from the poulterer), with any kind of small vermin, such as rats and mice, or even small birds when dead ones can be found.

The *Raven* should be allowed plenty of freedom, or he will hardly thrive. It can be taught to talk fairly well. The food is morsels of raw meat, with any sort of paste of flour mixed with milk and the scraps from the table; also mice, dead birds, &c., when they can be had. The *Jackdaw*, the *Chough*, the *Jay*, and the *Magpie* are all fed and treated in the same way. The jay is the most handsome of these; but for amusement—genuine fun, indeed—either the jackdaw or magpie is to be selected. The *Starling* is far before either as a pet. He ought to be allowed to go to his cage, or leave, just as he chooses. He will look after himself, and even make friends with the cat. His food is flour or pea-meal paste (or a paste containing currants, ants' eggs, &c.), flies, meal-worms, sand-worms, &c. Indeed, nothing comes wrong to this prince of birds. All his lessons in talking and piping tunes must be given while he is in the cage. He is very fond of a bath, which should be allowed to be taken on the kitchen floor. The cage should be large, the bottom being covered with a piece of paper with sand over it. This is easily removed every day; or the sand may be placed in a drawer.

Choosing a Bird.—As to buying birds in shops, if possible someone who knows the kind of bird to be bought should make the purchase, and even he ought to hear it sing, and convince himself that it is a young bird, hatched probably the year before. A bird should not be bought from any one in the street. Ten to one it is a wild one "doctored;" and no matter how cheap it may be, the money is merely thrown away. British birds are often advertised in the ordinary papers devoted to live stock and pets. The average price for some of these birds would be as follows:—A peregrine falcon, from ten shillings to two, or even three, pounds, according to the training; other hawks, about seven-and-sixpence each; owls, about five shillings—this for common kinds; raven, fifteen shillings; jackdaw (hand-reared, and a talker), five shillings; a magpie, if a very good talker,

would fetch as much as one pound and over; black-birds and thrushes in full song and good plumage are worth five shillings each; a bullfinch that will pipe is worth five shillings, and far more if well trained; a goldfinch—good songster—from five to ten shillings; ordinary finches, such as the green finch or chaffinch, about two shillings each; red-poll, trained to draw seed and water, about five shillings; linnets, half a crown each. There is, however, another, and even a better, plan of procuring birds—namely, from the nest. This only applies to the country. The young should be taken a day or two before fledging, and fed on proper food. It is best to take several, or even all the nest. The cock or cocks can be kept, and those not wanted may be set at liberty. These latter will seldom desert the garden afterwards, and will sometimes become even too tame. But no one should attempt to rear a nest of young birds who is not prepared to make some sacrifice as to sleep and general comfort for a week or two, for the young birds will not thrive, and may not live, unless they are fed very early indeed every morning—at three or four o'clock, if possible—and almost every hour all day long, until they are able to feed themselves.

What all Birds require.—All birds kept in captivity must have good, clean, suitable food, and plenty of it; an abundance of soft pure water, both for drinking purposes and for bathing, if so minded; a large roomy cage, or perfect freedom about the house and in the garden; plenty of gritty clean sand (sea sand or fine gravel) suited to the size of the bird, a supply of green food, fresh air, sunshine, and warmth in winter.

All birds need special care when *moulting*. The general plan, with ordinary birds, of nursing them through the moult is similar to that recommended for canaries. The food must be rather more nutritious, but neither tonics nor stimulating food should be given for the first few days, because the bird is then more or less fevered.

Different kinds of Food.—There are hard and soft-billed birds, and there are flesh eaters, such as our birds of prey. Of seeds we have canary, millet, rape, linseed, inga, maw, and hemp. The hemp should always be given sparingly and cautiously, as it is heating, while the maw is stimulating, and probably narcotic: some birds—tits, for example—are very partial to it. As soft food we have a mixture of pea-flour and water; German paste, which is to be bought in tins in the grocers' shops; and a mixture of hard-boiled egg (shell and all to be pounded up together), with a few grocers' currants, a little German paste, grated carrot, and

some ants' eggs. These last are the larvæ of the ant, and can be procured dried at the bird-shops. Insect food of all kinds is used, and may be gathered in the garden. Then as to green food, we have a great variety—groundsel, chickweed, plantain, lettuce, watercress, and many kinds of seedling grasses, and even flower seeds on their stalks, such as those of forget-me-not where this is plentifully grown. We might add that many birds are fond of wheat, oats, barley, &c., and boiled maize. Also that rape may be grown in the house, and used as green food when this is scarce. Whatever insect or other food is given to cage-birds, or birds in a small aviary, it must be clean and wholesome, and perfectly fresh. The above foods are used for foreign birds as much as for British. Indeed, the list includes nearly everything that is used, though we should add meal-worms and gentles, snails and garden worms.

Meal-worms and German Paste.—Although many people who keep birds look upon German paste as the greatest abomination, there is no doubt it comes in handy at times, and meal-worms are always so. The following recipes are given in "Cassell's Book of Cage-Birds":—

Meal-worms.—"Fill a gallon jar with bran, barley, or oatmeal, and a piece of sugar-paper or old leather. In this half a pint of meal-worms may be placed, and if allowed to remain for three months, being occasionally moistened with a cloth soaked in beer, they will become beetles, which in their turn lay eggs and propagate their species with great avidity."

German Paste.—"Three-quarters of a pound of pea meal, a quarter of a pound of coarse Scotch oatmeal, one ounce of moist sugar, one ounce of olive-oil, two ounces of honey, half a pint of well-crushed hemp-seed, half a gill of maw-seed—the English gill. The meal and sugar should be well rubbed in, then the oil and honey, which have been first well mixed. Stir the whole together, so that there may be no lumps, then add the hemp and the maw-seed." We may observe, however, that where only one bird is kept such a large quantity need not be made, as it will spoil. It is perhaps, on the whole, better to buy German paste—if it must be used—from the shops.

Foreign Birds.—How to get a few pretty foreign birds to keep in a nice large parlour cage is a question that requires a careful answer. We must not altogether trust advertisements in this case. If we happen to know a respectable breeder or dealer, well and good; but many of the birds brought home to this country have been so very badly used on board ship, and kept in such confined and dirty

quarters, that they suffer from blood poisoning. As soon, therefore, as they are exposed to the least cold or draught in England, they die; and if we have bought one of these, our money is lost. Again, some unprincipled men buy up a few of these birds, keep them in a warm place, and advertise them as acclimatised. The best plan is to trust to the ordinary "naturalist" or bird-shop keeper. Very likely the birds have been with him for some time, and so have become accustomed to the change of food and change of climate. But as to price, we must naturally expect to pay a little more from the retail than from the wholesale dealer: this is not, however, money thrown away. Fair prices for a few of the common foreign birds would be as follows:—A pair of mannikins, spiee birds, Java sparrows, waxbills, weavers, cut-throats, or avadavites, ten to twelve shillings; diamond sparrows, one pound a pair; budgerigars and love-birds—different sorts—ten shillings a pair; Japanese nightingales, seven-and-sixpence each; rose cockatoos, ten shillings each; young grey African parrots, fifteen shillings each, but if acclimatised, five pounds each to ten pounds if a good talker. Long-tailed green parrots, young, ten shillings; red-headed resellas, thirty shillings; cardinals, ten shillings; green parakeets, from five shillings; green parrots, from twelve shillings each; zebra doves, ten shillings a pair; peaceful doves, from two pounds a pair.

In buying foreign birds, whatever they are, one must look out for signs of good health. The bird should be bold and bright-looking, and quite lively, eating its food now and then, and probably singing. It should be clean in plumage—a sickly bird lies or sits about, and gets soiled in breast and plumage generally, and perhaps loses the tail feathers. The feathers must not stare or be ruffled-looking. A shopman may say that things will all come right after one has had the bird for a week. We would not trust to this. We must have health to begin with. Especially should a parrot be in good condition, and it is also unwise to buy one with its wings cut. Of course, if the bird is warranted to be a talker, and perfectly acclimatised, the plan is to have it on approval for a few days. And the same with a cockatoo. Having bought the bird or birds—small foreign ones—they are to be taken carefully home, and turned into the cage, which, as regards food suitable for them, water, sand, &c., must be all ready, and the cage must be kept in a quiet room for a few days.

Cages for Foreign Birds.—A good large waggon-shaped cage that may be easily cleaned out, with perhaps a kind of retiring-room partly covered round, and suitable recesses for food and water, is

all that we shall want. The wire-work should be galvanised, not brass, and not painted, and the bars should be placed near enough to prevent the birds meeting with an accident by getting about half through. The bottom of the cage should be a zinc drawer. Wood is apt to get foul, and *cleanliness* is of the very greatest importance. Every morning this drawer should be taken out, thoroughly cleaned, covered with pieces of paper, and sand spread over that. Perches should be suitable to the size of the birds' feet, and solid. Indeed, there should be no crevice or crack in the wood-work left open anywhere to harbour vermin. As with other birds, food dishes, drinking-fountains, and bathing utensils, should be of glass or china. There are different styles of cages for different species of birds, and these may be seen and studied in any large and well-appointed bird store.

Food for Foreign Birds.—We have all the usual seeds used for our own British birds, and the usual soft food, and when purchasing a bird, one should make a point of inquiring—even before concluding the bargain—what is the proper food or treatment for it, and if it requires any speciality. As an example, the American Thrush or Mocking-bird, the *Mimus polyglottus*, which we know to be an insect-eater in the wild state, thrives well on a mixture of stale bread, boiled mashed potato, and hard-boiled egg. No more is to be made at a time than can be used. Of course the bird has now and then some substitute, such as scraped lean meat, for its insect food, and it also has berries and fruit. It is absolutely necessary that whatever fruit be given to a soft-billed bird, it should be clean and wholesome. Some of our own garden fruit might well be dried for winter use—say, rowan berries, and perhaps barberries and *ivy berries*. Concerning these latter, we do not speak from experience, but we know birds eat them in the wild state, and so they do the red

berries of the spindle-tree. The animal chalk made from the bones of the cuttle-fish is a speciality; so are dried gnats and cockchafer meal, egg-bread, and of course ants' eggs.

Food for Parrots and Parrakeets.—For the Parrakeets we have a variety of diet, such as oats (good and wholesome), boiled rice, canary-seed, millet, maw, &c., and a sop of bread and milk. No hemp-seed; monkey-nuts might be added. Larger parrots are fed on sop of bread and milk, of which they are extremely fond; well-boiled Indian corn; seeds, such as canary, millet, and hemp; wild oats; and now and then raw ripe fruit, or even garden roots. At intervals cayenne food may be given to a parrot with advantage. *Cockatoos* are fed much the same. Sometimes the diet of these latter consists almost entirely of maize and oats, and, as a rule, far too much hemp-seed is given. Nuts of various kinds are much relished by parrots. Beware, however, of bitter almonds, which contain prussic acid as one of their active principles. No *meat* or *bones* of any sort should be given, and no *dainties*, with the exception of a morsel of sweet biscuit, as a reward for a cockatoo when performing tricks. Parrots and parrakeets all want warmth, clear water for drinking and bathing, and, of course, sand and gravel and a little green food. Great care should be taken that the sop is always fresh. Perhaps in summer it will be as well to make it with water instead of milk.

A Small Parlour Aviary.—We have only to suggest that several very beautiful foreign and British birds may be kept together in a parlour aviary. They are to be chosen for their songs and plumage. Care must be taken to keep out all quarrelsome birds, to have the inmates matched as for size, to feed on appropriate food (soft and hard), to keep clean, and not too crowded.

WASTE.

In all manufactures the more we increase in knowledge the less wasteful do we become, and one of the chief causes of cheapness is that modern manufacturers have learnt the art of turning to account the material that years ago used to be thrown away. There is no doubt that throughout the length and breadth of the land there is far less waste now than there used to be fifty years ago; and, as we have before remarked, as a rule it will be found that there is less waste in the houses of the rich than in

the houses of the poor. It would be difficult for persons in the present day to realise the recklessness and waste of a generation back. One of the greatest writers on the subject of cooking was Louis Eustache Ude, and as an illustration of what used to take place fifty years ago we will give the following quotation from his published work:—"I have known balls where the next day, in spite of the pillage of a pack of footmen, which was enormous, I have really seen twenty or thirty hams, one hundred

and fifty or two hundred carved fowls, forty or fifty tongues given away, jellies melted on all the tables, pastry, patés, aspics, and lobster salads, all these heaped up in the kitchen, and strewed about the passage, completely disfigured by the manner in which it was necessary to take them from the dishes in which they had been served. And this extravagance had been of use to no human being; for even the servants would not consider it a legitimate repast, were they obliged to dine on the remains of a former day's banquet!"

Fortunately, a thorough change has taken place in the whole tone of society since these words were written, and such recklessness as is here described would in the present day be unknown. M. Udo also refers to a period which may be considered exceptional: namely, immediately after a ball; and that suggests to us to divide our subject into two parts:—First, the waste that may or may not take place on great and exceptional occasions; secondly, the waste that may or may not take place daily throughout the year. Of course, it is the latter that is the most important, and about which we shall have most to say.

Exceptional Occasions.—It will often be found that housekeepers who are as a rule most economical, will break down on great occasions, simply because they lack experience. Some time ago we might have taken, for example, a wedding breakfast; but fortunately this most wasteful form of entertainment is rapidly dying out. What would not some married couples with two or three children now give for the money *wasted* over the wedding breakfast of the bride? We will not, therefore, enter into the details of a wedding breakfast. But there are three exceptional occasions where waste is likely to take place through the ignorance—or, rather, we would say, the want of experience—of a housekeeper. These are dinner parties, balls or evening parties, and picnics.

A Dinner.—How are we to avoid the waste too often incidental in giving what people call a "big dinner"? The rarer these events are in any household, the more likely are we to go wrong. A high-class West End pastrycook, like Gunter, would be able to tell you with almost ridiculous accuracy how much you ought to provide, how much would be eaten, and how much would be left. But housekeepers to whom these events are rare, always make the mistake of providing too much. As we have already written on the subject of how to prepare a dinner for a party, we will only here add a few hints from the point of view of avoiding this waste.

There are several points to be borne in mind—

First, the number of persons in the family, including the servants; secondly, the time of year; thirdly, do you employ, in addition, hired waiters and a charwoman? As to the first point, it is obvious that if the family consists of eight or nine persons, there is no great harm in having a lot of things left over. Secondly, if the dinner party is given in the middle of July, you must act very differently to what you would do in winter-time, when everything would keep good for a week or a fortnight. Thirdly, if you employ two or three hired waiters and a charwoman, you need not have much fear about what is left over.

Then, again, if you wish to avoid waste, you should avoid having dishes which experience ought to tell you will invariably be left. It is a great saving to have the dishes that require carving carved outside the room, whereby we avoid large joints for appearance's sake. Those who are in the habit of constantly dining out in good society, will recollect how very small the helps usually are. Those who give occasional dinner parties seem to forget that the human stomach is limited, and, from a feeling of mistaken hospitality, force their guests to either finish their dinner before dinner is half over, or else leave things on their plates. This is simply due to want of experience. Another very common waste at dinner parties is a profusion of sweets, though where there are a lot of children this is comparatively of little consequence; but the tendency of the age is fortunately towards little and good. One *omelet soufflé*, flavoured with vanilla, would be worth any amount of moulds of jelly, fruit-pies, corn-flour pudding which is supposed to be blanc-mange, jam tarts, &c. As a rule, there is but little waste in an *omelet soufflé*, for the simple reason that the whole of it is nearly always eaten.

Evening Parties.—The same general principles hold good with evening parties. Provide chiefly things that are eaten; have little of what is not eaten. Sweets are neglected. Lobster salads are invariably finished if made from fresh lobster. Housekeepers who pretend that lobster salad can be made from tinned lobster are either totally deficient in palate, or belong to that vulgar class who, in trying to appear above their proper station, in reality sink below it.

Picnics.—A few more words on the subject of picnics. Here the weather is probably warm. It is not an uncommon occurrence in picnics for some of the provisions to turn "high" in the course of the day, and this particularly applies to cold lamb. One stock dish in a picnic is pigeon pie; and when the pigeon pie is made *for a picnic*, you will avoid

waste by putting in an extra packet of gelatine, in order to make the gravy a *hard* jelly.

Many persons will corroborate our statement that joints of cold lamb very often get bad on these occasions. The exposure to the open air and the flies have a great deal to do with this. On the other hand, there are few joints better adapted for a picnic than a piece of cold roast veal which has been boned, rolled, and stuffed; and these bones taken out of the veal are a grand assistance in making the gravy for the pigeon pie. If you have a good cook, how far better it is to make galantine of fowl instead of having cold roast fowls, whose hollow carcasses seem to invite bluebottles to be unwelcome guests on the occasion, besides which you can again utilise the bones of the fowl for gravy and stock, instead of leaving them behind you on the grass. It is quite possible to enjoy ourselves out of doors without waste.

Afterwards.—It is after a dinner or supper party is over that the really good cook rises to the occasion; and here we come to a very delicate subject. That is, What ought to be done with all the pieces left upon the plates, and more especially when you don't know whose plate it was? How far is it our absolute duty to gather up the fragments that remain, that nothing be lost? Perhaps, upon the whole, it will be best to treat this subject by going at once to the root of the evil, and ask why it is necessary that anything *should be left* on the plates at all; and thus we may turn now to consider the chief point in connection with our subject, and that is *daily* waste. For we fear that waste does occur daily in many households.

Waste in Carving.—We will illustrate this very important point by supposing the common case of a family, consisting of husband and wife and four grown-up children, who dine off a couple of roast fowls and some dish placed at the other end of the table, which we need not specify. The ordinary custom is for the carver, who is generally the master of the house, to cut up the fowls as follows:—He will help his wife and daughters to the two wings, the merrythought, and the breast. The legs, from some unknown law of nature, seem naturally to belong to the sons or himself. These bones of the legs, wings, breast, and merrythought are left upon the plates, mixed with the remains of a little bread-sauce, gravy, potatoes, and very often greens: as in England it is by no means uncommon from "custom" to have two vegetables with the meat, never mind what that meat may be. A skilful carver, by taking a little more time, could detach all the meat from the bones, and reserve these bones on the dish. Those

readers who have dined abroad at foreign restaurants will call to mind, when they have asked for a portion of fowl (which, by-the-bye, is generally enough for two persons), how very rarely any bone is served at all. The best portions are slices of white meat off the breast. The thighs and drumsticks of fowls are often served *minus* the bone. The reason is obvious. These bones are too valuable to be left on the plates, and the restaurant keeper is too respectable to have it suspected that the scrapings of the plates supply him with more than sufficient material to make his soups and gravies.

At the family dinner we have described, it will often be found that one fowl is sufficient without cutting the other at all, and paterfamilias will be seen to cut up the back and the side-bones, and make them do duty as a second help to be picked on the plates; and probably his idea is that this is economy, and it is in these very households where the bones left on the plates are given to the dog, the cat, or the pig-tub. If paterfamilias had studied French cookery, he would know that there would be *less waste* in leaving the carcass on the dish, and cutting a slice of fresh meat off the second fowl. Were all the bones of the fowl left on the dish, the scrapings of these bones, with very little assistance from a piece of cold bacon, the remains of a veal cutlet, &c., will make a most delicious dish of *rissoles*, while the bones themselves will make over a quart of soup or gravy.

Take another instance. On the one hand, medical men and others are constantly telling us that we eat too much meat and not enough vegetables and cereals. On the other hand, there are thousands of houses in England where good mothers daily endeavour to bring up their children properly, and all young children who are respectably brought up are taught that they must not leave things on their plates. Suppose the children's early dinner consists of a leg of mutton and a rice pudding. Some of the children are pale and delicate, and the anxious mother wishes to "strengthen" them. She cuts a child a delicate juicy piece of meat, with the red gravy in it. The child eats a few mouthfuls, and then begins to "mess it about on her plate," as nurses call it. The mother, from a sense of duty, not of inclination, says, "Now, my dear, unless you finish your meat, you must not have any pudding." This is an instance of terrible waste. The child would have done better on bread and gravy, and then pudding. The child's nature rebels against the meat; but unfortunately, although many mothers are alive to the fact, there are thousands of others who are not.

Another equally important point is, do not help people too largely. How many hundreds of thousands

of persons every day—not only in private houses, but even in dining out at restaurants—finish up what they have got on their plates from a sort of sense of duty, when they would have much rather gone without the last six or seven mouthfuls! Here is a constant source of waste which is not sufficiently thought of. We fear it is too true that the world is divided into two classes—those who eat too much, and those who do not get enough. In families it is very easy to find out what may be called the natural capacity of the appetite of each member. How far better is it to help each person to rather less than they want than to rather more! The first error is easily rectified by a second help: “I will take just a little tiny piece more.” The second error means waste. Probably all medical men will agree in saying that if a man has a fairly good meal, if he forces himself to eat more than he really feels inclined to, the motive of course being he does not wish to leave it on his plate, that it does him more harm than good. And here we see a double cause of waste. Not only is the food wasted, but the individual injured—very slightly, perhaps; but then, if this occurs *daily*, we have ultimately the additional expense of a small bill at the chemist's, if not a large one at the doctor's.

We have before adverted on several occasions to that very common joint, a roast loin of mutton. The subject of waste of food is so important that we trust we may be pardoned if we advert to it once more, as it is a joint that illustrates our subject better than any other that we know of. It is a pitiable sight to watch a bad carver with a badly-jointed loin of mutton. Some persons get a thin slice of mutton with no bone and a good deal of end; others get an extra dose of bone, but the help is, to say the least, very inartistical. The bones are, of course, left on the plates, and, alas! too often so are the ends. There are perhaps no plates sent downstairs that have so demoralising a look as those on which a loin of mutton has been served. How different the result all round if, as we have before recommended, we buy the loin without having it jointed at all, and, having cut off the end, have it roasted and carved saddle-fashion; or, better still, bone the loin and make a dish of outlets from the better part and Irish stew from the ends, a suet pudding from its superfluity of fat, and good stock from the bones.

Boning.—This brings us to a very important point in the subject of waste, and that is boning, which is not sufficiently practised in this country by those who wish to avoid waste. We have already described how to bone, but boning should be regarded from another point of view, and that is the

economical one. There are many joints that can be boned, and many that would be unsuitable from an Englishman's point of view, but not from a Frenchman's. A great deal of this is simply habit. We bone a loin of mutton. A Frenchman will bone a leg of mutton, and fill the part where the bone was with some kind of forcemeat like veal forcemeat. Suppose we have what is often called a “splendid haunch of mutton.” The ordinary middle-aged Englishman would probably remark that it would be a cruel thing to spoil it; but then, a haunch of mutton is, after all, only a leg joined on to the loin. Englishmen at present have advanced to the point in which they see the advantages of boning ribs of beef. Perhaps in a few years' time they will advance further. The reason we lay so much stress on boning is that so few persons realise how much can be done with the bones. In making stock from bones, it is a great saving to chop up the bones as small as possible. Bones enable a family to do with far less meat than would otherwise be required. Thick soups and gravies can be made from them, and the amount of saving is simply enormous, as by this means persons eat a great deal less meat than they otherwise would.

We all know that abroad one of the most popular dishes is *Filet de bœuf*, which is served with almost an infinite variety of sauces, in addition to the ordinary way of sending it to table with fried potatoes, a little piece of fresh butter and chopped parsley being placed on the top at the last moment. We do not perhaps realise the fact that this *filet* is the result of *boning* what in England we call the sirloin. Of course the sirloin of beef bone is used raw to assist in making soup and gravy. So highly esteemed is this *filet*, that it fetches a higher price than any other part of the bullock, and in Paris it cannot be bought retail under two francs a pound.

Over-cooking.—This is another very common cause of daily waste in middle-class families; and we will illustrate what we mean by taking an extreme case. Suppose we have a leg of mutton weighing eight or nine pounds, and a good roasting oven in which to cook it. Imagine, for the sake of argument, that the cook allows this leg of mutton to go on roasting for four hours. Every morsel of fat would, of course, have run away to dripping, and the meat would be so dried up as to be hardly eatable. It would be hard and tasteless, without a morsel of red gravy in it, and of course the whole joint would be utterly ruined. There would also be very little nourishment in the meat at all. Now, where has all this nourishment gone? Up the chimney; and this is pure waste, as it will not even benefit the sweep. This, of course, is an extreme case which seldom

happens, but which illustrates our point. There are many persons who like their meat what is called "well done"; but then there is a limit, beyond which absolute downright waste commences. If we put a leg of mutton of this size into the oven, we know that at the end of one hour it will be nearly raw, and blue in the middle. At the end of five hours it will be what people sometimes call burnt to a cinder. No one could say at what precise second of time waste commences; but those who give directions to their cook generally, in the form of telling her to be sure and have the meat well done, would do well to bear in mind that beyond a certain point the food is absolutely wasted.

This point of over-roasting often takes place in the cooking of poultry and game. How often do we see a couple of fowls sent to table in which a great part of the nourishment has disappeared, owing to the fact of their having been kept in the oven half an hour—ay, and even three-quarters of an hour—too long! You can always tell when this has been done the moment you carve the fowl. The legs come off from the carcase of the bird almost of their own accord. The breast of the fowl, instead of being juicy, crumbles on the plate, and the flavour is not much better than that of cotton-wool. How very, very often is a splendid turkey, weighing perhaps sixteen pounds, utterly spoilt owing to over-cooking! If you speak to the cook, she will argue: "Ah! but the legs take a very long time to cook through." As a rule, a large turkey will supply almost a dozen people, without the legs and drumsticks being cut into. Besides, what folly to spoil the *best* part of the bird for the sake of what are generally thought the inferior portions! Of course, a good cook would lard the breast, or cover it over with strips of fat bacon and oiled paper; still, the rule is that the breast is over-cooked, and consequently partially wasted. Were cooks to bear in mind that nearly always the legs are left to get cold, they would not fall into this very common error. In fact, the legs of a turkey are best if *not* cooked sufficiently, as then they form an excellent hot dish the next day, when they can be grilled or devilled. Were they thoroughly cooked at starting, they would not warm up at all without being spoilt.

This waste of over-cooking is still more noticeable in ducks and geese. As a rule, in private houses, when you carve a roast duck by cutting slices off the breast, you will find that the meat drops from the bone, instead of slightly clinging to it, as it should do. We would ask housekeepers the question, "How often have you cut a slice from the breast of a duck, and found it moist and juicy?" If you can answer "Always," all we can say is, "We congratulate you on your cook." The rule is the other way. The

breast has shrunk, the skin separates from the meat, and the breast-bone looks dry, hard, and white.

What a lot of waste there is in many houses from over-cooking! What a delicious and nourishing thing is the breast of a well-cooked partridge, when it is juicy and tender! But how often, especially at dinner parties, does the white meat of a partridge or pheasant crumble to pieces on your plate, and you have to stick it together with the bread-sauce in order to eat it! Partridges and pheasants, as well as grouse and woodcock, are very expensive as well as very delicious things, and it is a wicked waste to send the best part up the chimney, as is generally done. The cause of this is anxiety on the part of the cook—or, perhaps it would be better to say, want of nerve. If cooks could bring their minds to realise that in a dinner consisting of soup, fish, entrées, joint, and game—and this is by no means an uncommon thing for a dinner party—she must not put the game in the oven *until after dinner has absolutely commenced*, how much less waste would there be!

Another form of waste is unskilful cooking on the gridiron. At the best of times grilling is not an economical form of cooking; but when the gridiron falls into unskilful hands it is a fruitful source of waste. The great secret of a well-cooked steak is to quickly harden the outside of the meat, so that the juice of the meat can be kept in it; and a good steak should be almost black outside and red—not blue—inside. When, however, the cook sticks a fork in it to turn it, or—horror!—cuts a gash in it to "see if it is done," she is positively throwing away good food. The steak is sent to table hard and dried-up, and, when cut, the inside looks white, like cooked liver. This is waste. The same with a mutton chop. When these are over-cooked, so that the meat positively shrinks on the bone, we are sending a lot of nourishment up the chimney.

Small Wastes.—A curious instance of waste through ignorance came under our notice not long ago in some country lodgings. The case is probably rare, but facts are always worth mentioning. The landlady, who acted as cook, roasted a small piece of sirloin of beef. The beef was placed on the dish. The fat in the tin in which the joint was roasted was poured into a basin, and the tin was put by to be washed up. She had never heard of pouring a little boiling water into the tin and scraping it, and, with the assistance of the dregs of the dripping, making gravy. They were fairly well-to-do people, and throughout the whole of their previous career these dregs of the dripping-tin had been thrown away.

This gives us a very good definition of kitchen

waste, which is—failing to use up *all* the material at our disposal. For instance, how often do people throw away a great portion of the outer leaves of a cabbage quite unnecessarily! Suppose we have a large cabbage. All that is necessary is to trim away all the decayed part. Often a quantity of the outer leaves is thrown away, from habit or thoughtlessness. When greens are sent to table, it will be generally found that tastes differ. Some persons will be found to help themselves to the stalk part; others seem to prefer the green. Which is best is an open question. The stalk wants more cooking than the leaves; and the secret of boiling a cabbage in order to have a good colour is to throw it into the water while the water is boiling. If, therefore, you have a large cabbage, do not put the whole lot in at once, but put the stalk part in first, and wait till the water boils—cooks have to generally press it down with a spoon—then throw in what we may call the intermediate part. Press this down with a spoon, and wait till the water boils again. Then throw in, last of all, the thin green leaves. By this means they will have a better colour, and the cabbage will cook more evenly. Often you will find that either the green part is over-boiled or the stalk insufficiently cooked. After all, if we wish to avoid waste, what we most want is a little common sense.

Again, in many households there is a daily waste in peeling potatoes. We are not sure, if we wanted to find out a cook's character, that we could do much better than look at the potato peelings. To peel a potato properly requires many sterling qualities—judgment, patience, and we may add conscience, certainly sound common-sense. The most economical way of cooking potatoes, if we wish to avoid waste, is to cook them in their skins; but then uprises that monster, "Custom." Most good judges of eating and drinking, and we may say even epicures, will admit that potatoes are nicest cooked in their "jackets." We wish some great leader of fashion would lead the van. What is nicer than a good large baked potato, which, after being squeezed in every direction in a napkin, at length bursts forth in a delicious gush of floury potato on the plate, recalling the good old days—alas! never to return—when Thackeray supped at Evans's?

In avoiding waste, the great point to be borne in mind is that we must think of little things. There is a well-known story graphically told by Lord Macaulay in his well-known article on Lord Clive, from which we can learn a lesson. In the siege of Arcot, when the provisions ran short, "the Sepoys came to Clive, not to complain of their scanty fare, but to propose that all the grain should be given to the Europeans, who required more nourishment than the natives of Asia. The thin gruel, they

said, which was strained away from the rice would suffice for themselves. History contains no more touching instance of military fidelity, or of the influence of a commanding mind." Cynically-minded men have somewhat spoilt this story by saying that the Sepoys knew a great deal more about cooking rice than the English, and with Oriental cunning got the better of their white comrades-in-arms, as the water in which the rice is boiled contains more nourishment than the rice itself. In any case the story contains a kitchen moral: which is—Do not throw away the water in which you boil the rice. If we wish to avoid waste, it is easy to accommodate the amount of water to the amount of rice, as we have mentioned in other articles. If we put in the right quantity, and boil the rice furiously for about ten minutes, and then let the saucepan stand by the side of the fire for twenty minutes more, it will be found that there is nothing to strain away. Boiling in this way, however, do not forget to grease the bottom of the saucepan at starting, as otherwise the rice will often stick, get burnt, and have to be thrown away; and this is undoubtedly a worse waste still.

There are two kitchen implements, both of which are exceedingly useful in enabling us to avoid waste. These are a wire sieve and a sausage-machine. The wire sieve enables us to eat a great deal which otherwise we should be almost obliged to throw away. For instance, it is almost impossible to make pea-soup without one. It is, however, not only in pea-soup that a wire sieve is particularly useful, but in making what we may call every-day soup from bones. The usual custom is to strain off the bones, but those who are particularly desirous of avoiding the slightest waste would do well to occasionally try the following plan:—When the bones have stewed a long time, and can be taken out white and bare, it will often be found that a certain amount of meat and gristle adheres to them. This can be cut off with a knife, and put back in the stock with the vegetables. Instead of straining stock, as is generally done, rub the whole, vegetables and all, through a wire sieve. This will not, of course, make high-class soup; but it makes very economical soup. Again, if you are making a little clear soup—on the occasion, say, of a dinner party—you can strain off the meat, after having extracted the juice for the clear stock, and instead of throwing away what is left in the sieve or strainer, you can put it all back in the saucepan, add any bones that you may have by you, and put it on again. This can then be treated like ordinary common soup. You get your clear soup, and, instead of throwing away the exhausted materials, they assist in making a common cheap soup, which will come in handy a day or two afterwards.

A wire sieve enables us to make green-pea soup out of the shells of peas alone. Suppose you have a dish of green peas, which, as a rule, would be considered rather an expensive vegetable. Do not throw away the shells, but boil them. If you have a little spinach, boil that with it; if not, half a teaspoonful of green colouring matter will be amply sufficient to give it the desired colour. A wire sieve is also useful, as it enables us to use up odds and ends of vegetables that have been left. For instance, suppose we have had for dinner a boiled leg of mutton, with carrots, turnips, and potatoes. The remains of all these three vegetables can be rubbed through a wire sieve, and added to the liquor in which the mutton was boiled, and the soup will be all the better for it. How often are three or four bits of carrots, and perhaps one turnip, thrown away! The expense, of course, is *very* trifling, but then in avoiding waste everything depends on an indefinite succession of trifles; each one in itself is like a grain of sand—nothing; but then the world is built of a certain number of millions of grains of sand.

The sausage-machine of course, as its name implies, is supposed to be for the purpose of making sausages; but in a well-ordered kitchen its chief duty is to help us to avoid waste, as by its means we can bring together any amount of odds and ends which would be very difficult to be mixed and utilised without its assistance. A dish of *rissoles* can be made by sending almost everything we have got in the larder through a sausage-machine. Suppose we have got a lot of odds and ends left. An almost bare sirloin of beef bone, a carcase of a fowl and one odd chop, the remains of a little piece of steak, a little liver and bacon, or the fag-end of a piece of boiled bacon, a ham-bone, and, in fact, anything. Here we have the material for a nice tureenful of soup and a dish of *rissoles*. Scrape every bone bare before you put it on to boil, take all the scrapings and bits of meat—the more the merrier—and send them through the sausage-machine with a piece of onion, some parsley, a little thyme, pepper, and salt, in proportion to the amount of meat you have got. By this means we avoid waste, as we use up *all* the materials at our disposal.

Neglect.—One not very uncommon cause of waste is letting things “get bad.” We have before adverted to the importance and necessity of boiling up milk, and also stock or soup, in hot weather, in order to prevent them turning sour. Still, in hot weather it is not an uncommon occurrence for a joint to get bad. A warm muggy summer's evening, when there is perhaps thunder in the air, is probably the most dangerous period. The great point at these seasons is to avoid having

much in the house at once, and also to avoid having in raw meat to be kept raw. Raw meat is more apt to turn bad than cooked meat, and there are times when a leg of mutton from a sheep that has been killed the night before will not keep over one day without being cooked. Poultry is more apt to get bad after it has been drawn than before. In many country places the poultry is brought into market by country-women drawn. When this is the case, they ought to be cooked the day they are bought in summer-time. Bluebottles seem to have an unamiable instinct of finding out these little domestic incidents, and their selfishness knows no bounds! Some meats have a tendency to turn bad in hot weather quicker than others. A shoulder will turn quicker than a leg of mutton. Lamb turns bad more quickly than mutton. The hardest kind of meat, so to speak, is a silverside of beef, or round of beef that has been salted when it was quite *fresh*. But, remember, this is rarely the case when you *buy* salt meat, as it is generally put into the pickle-tub because it will not keep any longer.

An ice-chest is generally regarded as rather an expensive luxury; but it very often in summer enables us to avoid waste. In establishments like large hotels it is not so much a luxury as a necessity. Ice in summer may be perhaps a luxury; but it is a cheap luxury, and in its way as cheap a luxury in summer as a good fire is in winter. Think of the difference that an ice-chest makes in butter alone in very hot weather. There is no economy so false as, with the motive of avoiding waste, to make children eat that which makes them sick and ill. When butter gets really rancid, the best method of avoiding waste is to throw it away. Some persons would say, “Oh! it will do for cooking purposes.” We beg to differ from them.

And this brings us to another very common form of waste in small private houses, and that is, fat for frying. We have, in previous articles, often reverted to this point, but while speaking on the subject of waste it is necessary to do so again. In many houses the so-called “frying” is in reality a method of cooking food by seorching it in a frying-pan, with a large dab of grease to prevent it sticking, which is invariably thrown away. If all these dabs of grease which are wasted were put together, we should have a respectable bath of fat, into which we could plunge whatever material we have; we could “fry” properly, and this fat will keep good for months. The excessive heat to which the fat is constantly exposed is the reason why it does not become bad. When we boil milk or stock to prevent it getting bad, the temperature cannot be raised above 212°; but when we heat fat, we can raise it to a temperature which will melt the tin that lines the saucepan.

Fat can be heated to 500° , and fat can also be clarified by being mixed with water when very hot; and when it settles in a cake, the impurities can be scraped off the bottom. In the end it will be cheaper, if we are going to fry fish or cutlets, to melt a whole skin of lard in a saucepan, into which a frying-basket just fits, and make this last three months. The only point to be borne in mind is that every time the fat is heated it must be to the temperature we have named—namely, between 400° and 500° .

Fish or Meat.—We have already called attention to the fact that eating more than is good for us is a form of waste. It is very difficult indeed to lay down any general law. People differ in constitution, and there is a great deal of truth in the good old saying that one man's food is another man's poison. We must avoid sudden changes. Doctors now all tell us that we ought to eat less meat, and more fish and vegetables. But at the same time it cannot be denied that fish, especially the cheaper kinds, is not a satisfying form of food for those who work hard with either brain or muscle. If anyone were to dine off a pound of plaice or whiting, he would probably not feel so satisfied as if he had dined off half a pound of steak, especially if the person has been in the habit of eating meat. The chief drawback to a diet of fish and vegetables to those who have been large meat-eaters is that they very soon get hungry. Persons will often complain who at first try a change of diet, that they wake up in the middle of the night, and cannot sleep because they feel what they call a "sinking." We have known cases where endeavours have been made to fall in with the modern theory, but where it has been found necessary to have a cup of strong beef-tea by the bedside.

The fact is, that diet is much more a question of habit than most people imagine, and changes must be made gradually. Children should be brought up to take less meat, but it is doubtful whether much good will accrue from violent changes when persons have turned forty years of age. In buying fish, it is obvious that unless we buy cheap fish we do not save. If we can buy meat at eightpence a pound, it is no saving to buy fish unless we can get it for less than fourpence a pound. We have here to regard the question of buying fish from the kitchen point of view, and not from the medical. What is the best method we can pursue in order to obtain a certain amount of cheap fish daily? We must recollect that fish is a very perishable article of food. There is nothing in this world that would help to make fish cheaper than the certain knowledge beforehand that a certain amount would be sold. Were a hundred

thousand families to go to big fishmongers, or even small, and say, "I will take so many pounds of fish every day for certain, and leave it to you to supply me with what fish you think best. I am willing, so to speak, to take the fat with the lean, but I will be a regular customer, and have, say, three pounds of fish daily." Probably by this means an enormous amount of waste would be avoided throughout the country. There are many dealers who would willingly jump at a bargain of this kind, and every one would profit all round. In country towns, suppose a few families were to co-operate and have a hamper down daily between them, what an enormous saving would ensue! We make this suggestion to housekeepers as one worthy of trial.

There is one other point in connection with the subject of fish which ought not to be omitted in writing on the subject of waste: and that is, Why do we not more utilise the fresh-water fish that abounds in many parts of the country? How many thousands and thousands of perch, roach, gudgeon, &c., are yearly caught for amusement and thrown away, simply because they are not thought worth cooking! They manage these things better in France, where they eat not only the fresh-water fish, but the frogs and the snails, as well as nettle-heads, herbs that grow in the hedges that we know nothing about, and a variety of fungi almost as good as mushrooms, but which are equally wholesome. Fresh-water fish require a lot of good cooking. In France they are invariably stewed in a little white wine; and in England, as the fish probably cost nothing, we should avoid waste by being a little more liberal in the sauce which enables us to eat them. Fresh-water fish, when thoroughly cleaned, are very nice baked in the oven with a little butter, a pinch of thyme, and a little chopped parsley; while, if mushrooms are in season, a few cut up with them are a wonderful improvement; and we need not grudge a dessertspoonful of sherry to give the dish a tone. A squeeze of lemon-juice is almost as good as the sherry; and when the fish are thoroughly baked—they require a good deal of cooking—some bread raspings can be sprinkled over them at the last moment, which improve them not only in appearance, but in taste. Where there are boys in the family we can combine pleasure with profit: and we all know that the fact of catching or killing anything oneself acts as a species of sauce when we come to eat it. Children have been known to roast a sparrow before the nursery fire, feathers and all, and make a feast off the result!

Want of Skill.—This is a very common form of waste in small households. Housekeepers and cooks too often attempt cookery that is utterly beyond

them. We will give one instance in point; and again we must, to our shame, contrast our national ignorance with foreign skill. We refer to puff-paste. It is wonderful what a Frenchman can do with a pound of puff-paste. Francatelli, whom all will admit is a great authority, states that puff-paste rolled out to the thickness of a quarter of an inch should rise to eight times its original height after being baked in the oven; but how many English cooks ever arrive at this pitch of perfection? Suppose we are going to make some sausage-rolls, and we carry out implicitly the directions of some self-appointed "teachers of cooking," who have not grasped the idea that it is necessary to learn before they teach. We remember a case in which directions were given to roll out the puff-paste half an inch thick, or rather less, cut the paste into squares, to place a whole sausage in the middle, to double over the pastry, to wet the edges in order that the paste should stick, and then bake in the oven. Were a skilled French cook who really *can* make puff-paste to carry out these directions, the sausage-roll would be eight inches thick! And even a railway refreshment room would stand aghast at a roll of this description. Cooking is really a high art, and there is as much waste in the kitchen where cooks attempt what is utterly beyond them, as there would be in a man buying a block of marble and attempting to make a marble statue, who had never gone through the long years of patient study necessary to become a sculptor.

Puff-paste is by no means so expensive or extravagant as many people would imagine, if you only possess the skill to make it, and an oven in which it can be baked. It is, however, positive waste to attempt making puff-paste unless you have the patience to do it properly. How many cooks, for instance, take the trouble to dry and sift the flour? (We speak not of Frenchmen, but of Englishwomen.) A first-class French cook, whose wages are four or five pounds a week, or more, knows the importance of these details. How many English cooks take the trouble to extract the salt from the butter? And how many make a point of using ice in summer, and putting the paste to get cold between two trays of ice for ten minutes or a quarter of an hour at the right moment? We fear very few, and the consequence is that they roll out the pastry half an inch thick, instead of one-eighth, and succeed in making twelve heavy patties, where a Frenchman would make forty-eight light ones. The argument these good women use is—"Oh, I have got too much work to do to go fiddle-faddling like that."

Miscellaneous Wastes.—Many years ago all cooks, as well as cookery books, were agreed on one point: and that was that it was necessary,

if we wished to make high-class soup or high-class gravy, to use a certain amount of gravy beef. To use bones is of course very economical, but it is, after all, only a makeshift. We consider, in the present day, to use gravy beef for making soup a species of waste. Good soup requires a mixture of veal and beef. We can buy our knuckle of veal at the butcher's, and our gravy beef at the grocer's—in the form of extract of meat. Our gravy beef was bought for us in Australia or America at a penny a pound. Why should we pay eightpence? We believe the introduction of extract of meat for cooking purposes to be one of the most economical cookery reforms that has taken place in this country during the last fifty years; and as the demand becomes greater, so probably will the supply increase; and as greater competition sets in, extract of meat will probably become cheaper.

Let us run through a few of the trifling instances of a day's work in the kitchen, and try and give a few hints on the subject of avoiding waste. In many households ladies like a cup of tea in bed in the morning, which is made in the kitchen. In how many cases are there two brews of tea made?—one for the bedroom and another for the servants' breakfast. In how many houses is all the tea in the teapot really used?

We have before adverted to the importance of using up all the pieces of bread, in connection with the subject of cheap soups. There is another way of using up pieces, and that is making them into bread-crumbs. The crumb can be used for this purpose, and the crust can be used for other purposes, such as bread puddings, which are best made from crust. In small households the cook, supposing she is going to fry some fish in egg and bread-crumbs, is in the habit of making fresh bread-crumbs each time she is going to fry anything fresh. In a big restaurant or hotel, as every man-cook knows, there is a drawer full of bread-crumbs, always ready-made. They could not get on without it. Why cannot women-cooks learn, and have their bread-crumbs always ready by them, in a glass jar like an empty three-pound jar of marmalade? The saving of time and trouble is enormous. Were this always done, and the cook smart, you could bring a sole into the house at ten minutes before seven, and have it on the table cooked at seven o'clock, if you have got hot fat ready, as of course they always do have it in hotels. In ordinary households the difficulty would be making the bread-crumbs.

Again, we will ask housekeepers and cooks, "On how many occasions in which you have egged-and-bread-crumbed fish have you made the exact quantity of bread-crumbs necessary?" Suppose, again, we ask, "Have you ever had a couple of tablespoon-

fuls of bread-crumbs left, with perhaps a smear or two of egg?" The answer will probably be "Yes." Would it be a cruel question to ask, "Have you thrown them away?" By having them ready-made in a jar beforehand, we not only avoid waste of bread-crumbs, but waste of time.

In ornamenting dishes, such as boiled white fish, mayonnaise salads, &c., we have often called attention to a cheap and simple means of so doing by colouring a few bread-crumbs with cochineal. Perhaps the quantity that we require is not half a salt-spoonful. We avoid waste of time by making, say, a tablespoonful at once, and putting them by in a little bottle. One of those little bottles that hold capers is very good for the purpose.

The mention of the word "capers" reminds us of another trifling waste. Capers are generally handed round in a glass dish. When dinner is over, the cook should put them back in the bottle, and see that the vinegar covers them, and not put the dish by in the larder, just as it is, for the capers to get dry and black. If the vinegar does not cover them, they get bad. It does not hurt, if there is not enough caper vinegar, to fill the bottle up with ordinary vinegar.

Suppose you have a quantity of cut cucumber left on a dish that has been dressed with oil and vinegar. If you put the dish by in the larder "just as it is," it will get stale. If you turn it all into a tea-cup, and see that the liquor covers it, it will keep perfectly good, and do for the next day.

A small piece of cold suet pudding can be used up by cutting it in thin slices, slightly buttering them, and placing a spoonful of marmalade or treacle in the middle of them.

We avoid waste both of time and material by making white and brown roux in quantity. To make just enough in a saucer in the oven just as we want it, is the cause of waste, as, if we make a little too much, we generally have to throw it away, and no one can guess exactly right.

It is a very great waste to buy bad eggs because they are cheap. The same principle applies to buying "high" fowls and stale fish.

You will avoid waste by buying a bottle of caramel (Parisienne Essence). A few drops of this is far cheaper than burning sugar in a spoon. You save losing your temper, and burning your fingers as well as the spoon.

Insufficient Cooking.—We have called attention to the waste consequent upon over-cooking, where our desire was to keep the flavour in. On the other hand, there is equal waste in insufficient cooking, where our object is to get the flavour out, or where the material is only fit for food when it is tender. We can illustrate this principle with

two things—cooking tripe, and ox-feet. Tripe is an economical form of food, as it contains an immense amount of nourishment. Of course, when we buy it, it has been partially cooked, and this cooking process varies. The same applies to ox-feet. It is a great saving in both cases to buy them as little cooked as possible. Suppose we buy tripe, and stew it in milk, as is sometimes done, for about an hour. When we eat it, we have, so to speak, to stick our teeth in it, and it is very doubtful, when eaten in this state, whether we do not lose the nourishment altogether. On the other hand, if we stew it till it literally melts in the mouth, how much nicer and lighter in this form than in the other? And then how much better is the sauce that surrounds it? The same applies to ox-foot soup. Unless this is boiled till the meat melts in the mouth, we waste a considerable portion of the nourishment that it contains. A still stronger case in point is that of making real turtle soup from dried turtle flesh. This requires patience. Dried turtle flesh varies. Some will get tender after it has been boiled for one day. Some require boiling two days. But you must remember that, as the turtle flesh gets more tender, so at the same time does the soup become more gelatinous.

The same principle applies in extracting the goodness out of bones, especially chicken bones. Leave them in an enamelled saucepan with a plate on the top all night. Fill the saucepan up to the top with water, and when the kitchen fire is lit in the morning, let them go on boiling again. They are less likely to get bad, and the longer they boil the better. We do not know that there is any limit.

This principle applies to cooking old birds. Sometimes we have to kill an old hen that has done laying. It is wonderful what a lot of nourishment there is in these old stagers. After a *very* long time the meat becomes tender, but it will be found to be what is called boiled to rags. But do not throw these rags away. Strain off the whole, and pick the bones, which will come out clean, and then put them back in the saucepan to go on boiling to make more stock. When these rags get cold, they will be found to have stuck together in a lump, from the jelly contained in the flesh. This will make an excellent dish of curry. Those who are fond of curry and economy should try the experiment; and as an old fowl in the country can be bought for eighteenpence, you will have for this money, in addition to your dish of curry, a good two quarts of stock, which, when cold, will become a hard jelly. Of course we take for granted that, when boiling down an old fowl, you will boil plenty of vegetables with it.

This also applies to other birds besides fowls. Very old partridges or grouse are almost thrown

away if we attempt to cook them as game, even if we keep them till they are green. We really avoid waste by giving up all idea of having game, and making up our mind instead to a nice tureenful of delicious game soup. We should cut the birds up fresh, and boil them for a very long time, till all the meat drops off the bones, until the bones come out dry and white, and the flesh has all crumbled to pieces, or, as we said before, what cooks call boiled to rags. Now all this meat must be rubbed through a wire sieve—every atom of it. By this means there is absolutely no waste at all; and better game soup could not be made, were we to buy it at a guinea a quart. In making soup of this description it would be necessary to add a small teaspoonful of

herbaceous mixture, which is the name by which grocers sell what French cooks know as aromatic flavouring herbs. Game soup requires the addition of a little wine, and nothing is better for the purpose than port-wine dregs, and it is a very foolish form of waste to throw wine dregs away. This should be borne in mind when any cask of wine is bottled in the house. It is well worth while, if you can, getting a bottle of port-wine dregs at the wine merchant's, which can be used for cooking purposes, such as game soup, salmi of game, jugged hare, &c.

In conclusion, we would remind the reader that the secret of avoiding waste is—*Let nothing be lost.* Cooks would do well to remember that it is a terrible waste for them to lose their temper.

FRIENDSHIPS AND SETTLING IN LIFE.

EVERY lover of Nature knows how alert, vigilant, and busy birds are during the time when nests are being built, and when the young are being hatched and have to be fed and protected. During this period the parents are fully occupied—chirping, twittering, and flying to and fro all day long. Perhaps, if we understood the mysteries of bird life, we might find that some birds were good and some bad managers; that some nestlings were reared properly, and taught how to trim their feathers, catch worms, and hop about in approved style; and that some performed these duties in a slipshod, irregular way, and, as a consequence, got into difficulties. In either case, however, the inevitable end would be the same. After a time the young birds would learn to fly and to shift for themselves, and then they would go off to build new nests, and would need their parents' care no more.

As it is with birds in the nest, so it is, to an extent, with men and women in the household. The busy time—the time for the exercise of household virtues and managing ways—is during the earlier years of life. In course of time the children grow up and settle, choose new friends, and for their sake leave the home and start households on their own account. Sometimes the changes thus brought about are very cruel. We are accustomed to speak of marriages as happy events; we put on gay attire for them, and smile and laugh about them; but we do not readily acknowledge, even to ourselves, how painful they often are. It is a matter of experience, however, that marriages divide families as well as unite them together. They separate sisters and brothers, parents and children; and they introduce

strangers into our familiar places—strangers who are not always congenial, but who have to be endured and made the best of, because there they are, and we cannot put them aside.

Writers of fiction generally take it for granted that brides and bridegrooms are the chief objects of interest in a household; they describe the joys and sorrows of some young couple, their difficulties and achievements, as if no one else were worth a thought. Yet the former members of a household still exist, even though there has been a marriage in the family. While the bride is making mistakes and feeling her way, it may be that the bridegroom's mother has to see her son—for whom, while she had him, nothing could be too good—in the hands of an inexperienced young woman, who is quite unequal to arrange for his comfort and to supply his needs. If his mother gives advice, as it is very natural and reasonable that she should do, she is supposed to be interfering and disagreeable. On the other hand, the mother of a newly-married daughter may see her child aiming at what is beyond her strength, and trying to do work for which she is quite unfitted, with the idea of pleasing a husband or a husband's family who do not understand her powers; yet the mother must remain silent, and watch mischief go on unchecked, for if she utters a word, loud will be the complaints about the doings of a "mother-in-law."

Incidents of the sort described seem very insignificant; but they are quite usual in household history. So usual are they, that an experienced observer remarked not long ago upon them, as again and again he had watched families grow up around him. They flourished, and everything went well for years; love

and harmony prevailed, and all seemed pleasant, until the children began to marry and settle in life. Then all comfort was at an end; dissensions crept in, jealousies were fostered, and eventually the married member of the household was as really lost to those who were bound to him by ties of blood and affection, as if he had been laid in the grave and the grass had grown over him.

Preparation for the Future.—A wise man said a little while ago, in words that might with advantage be learnt by heart by thoughtful heads of households everywhere, that "the only way to make a pleasant past is to prepare it." It may seem absurd to think of making *preparation* to the end that children may form friendships which shall gratify their parents, and may settle in life in a way that will bring joy, and not sorrow, to the members of their households. Yet if such preparation could be made, it would prevent many a heart-ache. Unquestionably this end is often enough reached. Even after the children marry, family harmony is frequently maintained; sons-in-law and daughters-in-law are never heard to speak scornfully or disrespectfully of "the old lady" or "the old man," but have confidence in and affection for their relatives by marriage. Conditions like these are so delightful and so conducive to happiness, that they are worth trying for. They are rarely produced by chance. Where they exist, we can generally see *why* they exist; and if parents can, by exercising a little forethought, make use of opportunities while they are present, they will be preparing for conditions which will make their own declining years peaceful and blessed, instead of being full of bitterness and disappointment. From the standpoint, therefore, not of young couples who are about to start as householders, and who are probably facing all the difficulties of the situation with the confidence that comes from ignorance and inexperience; but from the point of view of the fathers and mothers, with whom, as householders, we have been in company, under many varying circumstances, throughout the pages of this book, it is proposed to say a word or two about the precautions which it is well for parents to take with regard to the friendships and marriages of their children.

If preparation is to be of any avail, it must begin very early, while the children are altogether children; and parents must from the commencement—indeed, almost as soon as the young ones leave the nursery—be most particular about the friendships they allow their little ones to make. It is wonderful how the friends we make when young influence our lives, and also how constantly they appear and re-appear on the stage where we play our part. We rarely have

the same feeling for those whom we make after we are grown up, that we have for the friends of our youth. One reason of this is that we become thoroughly intimate with the individuals with whom we associated when young; we understand their peculiarities, and are familiar with their ways, and can see their motives through their actions. Concerning recent acquaintance, we continually make mistakes; when they say one thing, we think they mean another, and again and again we have to explain our words and actions, and make allowance for theirs. These circumstances do not promote cordiality or comfort.

We are frequently told in these days, that marriage is going out of fashion, and young men are blamed for their selfishness in preferring bachelor life to married life. Probably, however, selfishness has less to do with the matter than the observers imagine. The better sort of young men and young women hesitate to marry, because they have so few opportunities of becoming really intimate with members of the opposite sex of like mind with themselves. The entertainments and social gatherings of modern society, afford very little facility for the cultivation of intimate relations; there is nothing in them to bind men and women together. Not long ago a dear old lady who had been called upon to part with many of her dearest friends, said plaintively, "Life loses half its zest when there is no one to whom we can say, 'Don't you remember?'" The ground upon which individuals stand who have grown up together, is paved with materials for remembrance. It cannot be wondered at, therefore, that young men and young women constantly marry—or, if they do not marry, regard as friends—the friends of their youthful days. Boys marry the girls who are the friends of their sisters; girls marry the youths who are the friends of their brothers; and the unions thus made seem most natural and right, because they are the ratification of intimacies already established, rather than a formation of new ties.

If parents would condescend to think of such a thing, it would even be wise in choosing a school to reflect whether the class of children attending that school are of the sort one would wish one's own children to retain as friends through life. It would be worth while to give up tangible advantages and to make undoubted sacrifices, if by so doing we could ensure our children making acquaintances likely to be satisfactory and of value, rather than of the sort we should prefer to shake off. Nor would there be anything in the least improper in such forethought. The wise choice of friends is an affair of the greatest consequence. From our associates we catch opinions, principles, habits, and tastes, as

much as we catch measles or scarlet fever; and those who know what our friends are, may form a fairly correct idea of what we are ourselves.

Hospitality.—Parents who have done what they can to secure agreeable and satisfactory acquaintance for their children, would be wise to welcome those friends liberally to the house, and to cultivate their kindly regard. It is in this direction that economical parents too often make a mistake. They say: "To entertain one's friends is a costly business, and we must live within our means. Therefore we must 'keep no company,' and be most chary of receiving our friends." They forget that to entertain one's friends *need* not be a costly business. If we were content to live more simply—to be less pretentious, and ape our neighbours less—we might be hospitable at a very insignificant cost. When a meal for the family has to be provided, it is a trifling consideration to place a cup and saucer or a knife and fork for one person more than usual; and in households that are carefully managed, and where waste is unknown, hospitality of this sort can be indulged without being felt; yet it is this sort of hospitality *which is the most enjoyable, and which most promotes intimacy*. "To be given to hospitality" was regarded in olden times as one of the virtues, attached to which was the likelihood of reward—"thereby many have entertained angels unawares." Hospitality which attracted angels, however, could never have consisted in pretence or in a desire to make a display; it must have been genuine and, more than all, modest.

Whether or not it is difficult to practise this virtue, parents who desire that their children and themselves should choose the same friends should not lightly refuse to be hospitable. Young folks are very gregarious; if they cannot see their friends at home, they will see them abroad; and it is far better that the parents should know whom they see, and be acquainted with their goings-out and comings-in, than that the direction of these events should be handed over to strangers. There is no greater safeguard to young people brought up in a happy home than that they should enter manhood and womanhood in company with the loved ones of the home. Fathers and mothers, brothers and sisters, are amongst the treasures of life; and there is no greater mark of foolishness than to slight our treasures, while to make much of them is to make much of an advantage which has been given to us by Providence.

Many parents there are, of course, who, with the most liberal disposition towards their children's friends, are unable to receive them, simply because the youths and maidens have to leave home at this

most critical time of life and seek their fortunes abroad. Under these circumstances it is unavoidable that young people should form acquaintance apart from home. Yet parents might do much by securing introduction for their children to friends whom they know, and by encouraging the young people to bring their friends with them when they come home for a holiday. In every way that is possible, wise parents will try to obtain a hold of their children's friends, so that through them they may retain a hold of their own.

Deliberation.—One very great advantage which would result from young people mixing freely with companions of their own age in the home of their parents, would be that they would gradually have the opportunity of getting to know their acquaintance, and to be able to *choose* a partner for life in the full meaning of the word, and run less risk of making foolish marriages. When young people make friends away from home, too often they do not choose their lovers; they simply take individuals who enter their path. This is especially the case with girls; and thus we find a keen observer like George Eliot saying that a girl's choice in marriage is generally limited to her choice of saying "Yes" or "No" to the only man who proposes to her. Another keen observer, Mrs. Webster, is of the same opinion, and in illustration thereof, writing on "Yoke Fellows," tells the following amusing anecdote:—

Once upon a time in a Suffolk village, Bill and Jane, George and Martha, went to the parish church on a Monday morning to get married. Clergyman and clerk were ready to the appointed hour, and the wedding service went on satisfactorily till the clergyman, joining the hands of the first couple as they stood where the clerk had bidden them, began, "I, William, take thee, Martha—" "No, sir," interrupted William, "mine is Jane." "It's me, sir, for George," said Martha. The clerk affirmed that his sorting was right, and that Bill and Martha, George and Jane, had to be respectively joined in holy matrimony. The young people protested. The clergyman shut the book, for the banns had got mixed; and there must be three new "askings in church," with the right names coupled, before the marriages could take place. So the disappointed bridegrooms and brides withdrew to the churchyard, and the clergyman went to the vestry to take off his surplice. But, behold, before the clergyman had had time to go away, there were the brides and bridegrooms at the vestry door. "Please, would he be so good as to marry them the way the banns were?" They had talked it over together (they explained), and they had settled it would do just as well that way. They were all friends, and came from the same

hamlet; each young man could do equally well with either young woman, and each young woman could do equally well with either young man; they had come a long way, and had had to get a holiday on purpose. They should be just as happy with the exchange, they unanimously assured their pastor. So he put on his surplice again, and went on at "I, William, take thee, Martha."

Commenting on this incident, Mrs. Webster says: "These were sagacious young people, who judged themselves and life rightly. Marriage goes by choice—at least, it generally does in this country; but then, chance makes choice. There is really no reason why, in most of the marriages that take place between respectable persons of fairly decent tempers, another bridegroom or another bride would not have answered just as well. We need not think so badly of human nature as to suppose that the majority of persons who marry are not qualified to behave comfortably in the partnership with any partner—Martha as well as Jane, George as well as William."

The incident above narrated is, of course, an extravagance. Yet it furnishes a suggestion of a state of things which frequently occurs. If we could learn the history of the majority of young girls who marry very young, we should find that they nearly all married the first person who asked them. Yet a girl of twenty-two has a very different idea of what a companion for life should be than has a girl of eighteen; or if the girl of eighteen knows what is wanted, she has missed one of the best parts of life—her girlhood.

Hasty marriages are fatally dangerous, and they continually end unhappily, not only for the couple immediately concerned, but for relatives and friends, who have to suffer with the unhappy. They ought to be guarded against in every way. It is quite wonderful that fathers and mothers, who know from experience how serious a business marriage is, and how impossible it is to set right a marriage that has gone wrong, should be willing for a moment to leave to chance, arrangements which are so productive of happiness or misery.

People say if a girl does not marry when quite young, the chances are that she will never be married at all. Well, a marriage that is based on nothing but ignorance had better be missed. There would be fewer unhappy marriages than there are, and there would certainly be less pain for the relatives of the newly-married, if young people had the opportunity of walking deliberately into wedlock, instead of taking a leap in the dark into it.

If parents would prepare for a happy future in seeing their children happily settled in life, they must calmly accept and act upon two truths. The first is, that marriage and settling in life are natural

events, and very likely to occur; and the second, that marriage is nevertheless not the supreme end of life, either for men or women. On both these points a few words may be said.

Marriage is Natural, and likely to occur.—A great deal of nonsense is talked in these days about "Marriage falling into Disuse," about the excess of females over males, and about men being unwilling to enter the married state, and so on; and the wildest ideas are current about the preponderance in numbers of women over men. As a matter of fact, marriage is evidently the Creator's plan for humanity, and it will go on while the world lasts; for men and women are born to marry, as they are born to die. In these days marriages are as frequent as ever they were. If we look round among our neighbours and acquaintance, we shall see that as young people attain the marriageable age they marry, as they always did; and that the numbers of men and women who attain maturity without being married is small compared with those who are married. The change which has been made, and which has been caused partly by the keen competition of mercantile life, and partly, let us hope, by the growth of common-sense in the community, is that the age of marriage has been deferred. This is a very good thing for all parties concerned, and especially for the women. In countries where women are enslaved, early marriages are always the rule; and it is a very hopeful sign of the times that early marriages are becoming less common in England than they used to be. It is to be hoped that many very foolish marriages will be prevented thereby.

As to the preponderance in numbers of women over men, it is a fact that at the present time there are about 700,000 more women than men in England. When seen in print these figures look large; but when spread over the population they do not amount to more than 1 in 18. According to the census returns of 1881, more boys are born than girls; and the reason why girls preponderate, is partly that so many boy babies die during the first year of life, and partly that, on the whole, women live longer than men, because men are more exposed to hardship and danger than women. If we think of the losses caused by disaster in mines, collieries, and storms at sea, and of the accidents that occur in labour, business, and travel, we can easily understand how men decrease in numbers. War, too, is responsible for a great loss of manly life, and emigration to the colonies reduces the male population. The moral of the situation here is, that mothers and nurses should be taught how to take better care of the boy babies; this would soon set the balance even between the sexes.

The following figures, quoted a little while ago by a writer in the *Women's Penny Paper*, may throw a little light on this subject. They were arranged by Dr. Longstaff, an expert in figures, from the 1881 Census Report for England and Wales, and appeared in Newsholme's "Vital Statistics":—

Ages and Conditions.	MALES.		FEMALES.	
	Numbers.	Excess over Females.	Numbers.	Excess over Males. ¹
Children under 15 ...	4,728,466	—	4,740,125	11,659
Unmarried { 15-35 ...	2,704,062	72,629	2,631,433	—
{ 35-45 ...	195,427	—	233,820	38,393
{ 45 ...	200,255	—	293,151	91,897
Married { 15-35 ...	1,469,040	—	1,778,237	309,192
{ 35 ...	2,907,858	248,133	2,659,725	—
Widowed of all ages	434,794	—	999,046	564,256
	12,639,902	320,762	13,334,537	1,015,397

Balance Excess of Females, 694,635.

"If we analyse this table, we find that, while between the ages of 15 and 35 bachelors preponderate by 72,629, if we take bachelors and spinsters of all ages over 15, we find a preponderance of 57,660 spinsters, or about 1 in 53. According to the Upper Classes Table, there are at birth 1,053 boys to every 1,000 girls; and by the English Life Table of Dr. Farr, 1,048 to 1,000. The preponderance of males steadily diminishes with age, the diminution being most rapid in the first years of life. At the age of 34 the two sexes are equal in number; after that the diminution in the proportion of males goes on until, at the age of 70, by the Upper Class Table, they are 813, and by the English Life Table, 925 to 1,000 females. The total excess of women of all ages amounts to about 1 in 18, and chiefly results from the greater longevity of women."

A happy marriage is certainly the best for both men and women. It is perhaps most to be desired for men. Men who approach middle life without being married become selfish, and miss some of the purest joys of life. They are also less likely to be successful than are their married associates, because they have no great inducement to work. Their personal wants are easily satisfied, and their ambition soon dies. They have fewer resources than women have, and they are less able to supply their own needs. As they grow old they lose the delight of having young people about them, and a close observer of human life has said that old age is never happy, excepting so far as it is associated with the life of the young. Parents are often credited with the wish to bring about the marriage of their daughters. They ought to be even more wishful to bring about the marriage of their sons, because a wise marriage does so much for

a man, and fosters in him all the manly virtues, while women, even when unmarried, are quick to form ties. Parents ought not, however, to attempt to bring about any marriage, but to let it come as the sunshine does. "What the Lord has in store for us in this direction, He will bring into our house"; and individuals who have imagination to enable them to realise how very momentous marriage is, and how far-reaching and how tragic may be its results if it is a mistake, would hardly dare to lift a finger to further or contrive it.

Marriage, then, is the natural condition for both men and women, and in its perfection it realises the ideal of life. Thinking of it, there are few persons of experience who would refuse to endorse the description of it given by the great American divine, when he said: "A perfect and complete marriage, when wedlock is everything you could ask, and the ideal of marriage becomes actual, is not common—perhaps is as rare as perfect personal beauty. Men and women are married fractionally: now a small fraction, then a large fraction. Very few are married totally, and they only, I think, after some forty or fifty years of gradual approach or experiment. Such a large and sweet fruit is a complete marriage, that it needs a very long summer to ripen in, and then a long winter to mellow and season it. But a real happy marriage of love and judgment between a noble man and woman is one of the things so very handsome, that if the sun were, as the Greek poets fabled, a god, he might stop the world, and hold it still now and then, in order to look all day long on some example thereof, and feast his eyes with such a spectacle."

Marriage not the Supreme End of Life.—

But while granting unreservedly that a "really happy marriage" is so beneficent and delightful, it must yet be insisted upon that a marriage not happy is a most disastrous failure. Moreover, it is so irrevocable; the pain which it produces is so incurable, that the risk ought never to be taken lightly. It is true that hasty marriages do not always turn out disastrously. Men and women who find themselves "in harness together, and called upon to do their jog-trot in step," have a wonderful power of adapting themselves to the situation, and making the best of things. They accept the inevitable, and fortunately they do not always find out they have made a mistake. Often love does follow marriage, there can be no reasonable doubt of that; while others sink contentedly down into a kindly but dull toleration. Yet no one would call a marriage happy, simply because it did not end in a tragedy, but only in dulness and indifference.

And if the tragedy should occur, what words

can express the desolation which accompanies it? What words can describe the grief and bitter disappointment of the relatives who see one they love bound to an unworthy mate? There is perhaps no agony which can equal in intensity that of parents who see their virtuous and affectionate daughter in the power of a husband who appears to be intent on breaking her heart, or a son's career wrecked by his being tied for life to an unworthy woman. To call in the aid of the law is, under such circumstances, no remedy; while giving relief, it accentuates distress. No one who has had experience of how impossible it is to help a married person against the married partner of life would ever say that "the woman who misses marriage misses everything." As a well-known writer once put the case: "As we read this wholesale assertion, there rise up visions of the hosts of women who *in* marriage have missed everything. What of them?"

In these days so many careers have been opened to women, that it is no longer necessary for a woman to adopt marriage as a profession or occupation. Therefore parents who have been wise enough to take steps to make their children independent, need not be anxious to hurry their settlement in life. What men and women want in order to make life happy, is not so much a position, wealth, or occupation, as an interest which will take hold of the whole nature. If this can be secured, marriage will, in all probability, suitably arrange itself, or else it will as suitably be dispensed with. As Thomas Carlyle once said, "If only we could once for all get it fairly into our heads that neither woman nor man, nor any kind of creature in this universe, was born for the exclusive or even for the chief purpose of falling in love, or being fallen in love with! It is *one* of the purposes most living creatures are produced for; but, except the zoophytes and coral insects of the Pacific, I am acquainted with no creature with whom it is the one or grand object. That object altogether missed, thwarted, and seized by the Devil, there remains for man, for woman, for all creatures (except the zoophyte), a very great number of other objects for which we will still show fight against the Devil."

It is sometimes said that, as a consequence of the preponderance in numbers of women over men, there are at present "superfluous women" in the world; and parents who have daughters growing up around them are sometimes made unhappy when references of the kind are made. Such should remember that some of the most useful and the happiest women of the generation have settled in life and made true friends without being married. The following remarks on the subject were made a little while ago by an eloquent American writer, Mrs. Livermore:—

"Who are the women whom the social scientists insult with the adjective superfluous, at whom misogynists sneer as 'old maids,' and whom sociologists brand as 'social failures'? A glance at them reveals the fact that in many instances they are the most useful women in society. Were they expatriated to-morrow, the resultant misery to many classes would be almost as great as that which followed the immediate dissolution of the monasteries in the time of the Reformation. These women have failed to realise the generally accepted theory of woman's being; but, bereft of them, the world would suffer heavy loss, and society be halted in its noblest endeavours. For they have been foremost in deeds of philanthropy and self-sacrifice; they have given new power to literature and art; they have borne the benignity of their presence and the helpfulness of their strong souls into hospitals and prisons; they have carried healing and comfort to battle-fields, overhung with the sulphurous smoke of gunpowder, and burdened with the tainted atmosphere of blood. . . . Trained and educated as physicians and surgeons, these women have entered the lists against the many ills to which flesh is heir, and are routing the appalling physical ailments which have threatened to make womanhood interchangeable with invalidism. In the Church they are the priestesses of religion, repeating the lessons of love, patience, and self-abnegation which God and life have taught them. In asylums, with the gentleness of compassion, they are as mothers to hapless children, orphaned by poverty, crime, or death. In reformatories they are ingenious in devising methods for the exorcism of the spirit of evil from the poor women in their charge, and patient in their efforts to win them to nobler ways of life than they have hitherto known. In short, to paragraph their names and deeds is to rehearse a fragment of the roll-call of God's saints, to whom He will open wide the doors of His heaven with the plaudit, 'Well done, ye good and faithful!'"

Let, then, fathers and mothers be comforted. If they have done their best—trained their children to habits of industry and to the practice of honesty, and encouraged in them consideration for others and forgetfulness of self—the probabilities are that the friends they make will be of like mind with themselves, and that the relationships which they form will be productive of satisfaction and not of discontent. To look for seed of the same kind that we sow is a perfectly reasonable and justifiable mental process; and parents who have done what they can to make their children *worthy* of happiness, may safely leave the issue to Providence. Whether they are destined to marry or not, somehow they will find their own place, and do their own share of the work of the world.

PEACE IN THE HOME.

THE preceding volumes have dealt in some degree with the relations and duties of various individuals connected and bound together into what is called a "household," inhabiting one "home." It is needless to urge that if all fulfil their proper part in these home relations, the home which they inhabit must be a happy and a peaceful one, and that the happiness and peace must largely depend upon this condition being fulfilled; but at the close of this work a few words may fitly be said concerning the paramount importance of deliberately and continuously striving to create and maintain peace and goodwill in every household, under the conditions which actually prevail.

For these conditions are, that the duties and obligations of home-life are *not* perfectly fulfilled in any case, and very far from perfectly so in the great majority. Neither husbands nor wives, parents nor children, brothers nor sisters, mistresses nor servants, are all that they ought to be; many of us are very far indeed from it. We fail in motive, we fail in actual duty, we fail in patience and temper. It is of such imperfect men, women, and children, however, that households consist; and faults and neglects are therefore constantly occurring which more or less irritate and annoy others. It only becomes all the more necessary that everyone should constantly bear in mind the duty and importance of preserving peace in the home. Strife and petty discord will not be cured by long homilies, and we have no intention to offer any. We simply desire here to say a few words that may perchance direct personal attention and resolve towards this subject, and to suggest one or two very simple and practical points which may make it somewhat easier to attain the all-important object.

First of all, it is of much moment that the object be kept *constantly in view*; that, indeed, is the main hope and purpose of these very few paragraphs. This constant effort and purpose to preserve peace should commence first with the husband and wife, in whom every home takes its origin. Much is done if, before children and extra servants come to complicate matters, and bring fresh trials—as they generally will—the *habit* of patient forbearance has been already formed by those who will give the tone to all. Habits, however, are formed by efforts and acts; repeat these, even though the effort often fail, and the habit is gradually formed, when conscious effort nearly ceases.

Then, again, each member of a household has primarily to watch over and guard his or her *own* speech and conduct, irrespective of others. It is so easy to think that we should be different if only others were!

That is more than doubtful; for most of the sweetest characters anyone knows have been formed under the most trying circumstances; moreover, there would not be the slightest credit in our behaving decently if all around us were perfectly amiable. We have to learn to bear, and be patient and charitable, *as things are*; not as we think they ought to be. A year or two ago there was a long discussion in one of the newspapers on the question, "Is Marriage a Failure?" many writing on both sides. The most sad and interesting thing in the letters which appeared, was the light many of the writers unconsciously threw upon their own characters and way of looking at things. It nearly always appeared that the writer's *own* petulance and ill-will was excused on the ground of the other's faults; and that perfect comfort, amiability, and consideration seemed regarded as the irate correspondent's own natural right. Peace will never be realised where such a selfish view prevails. Again, many people say they "cannot help it;" they must be irritated when provoked. Even apart from the religious view of the matter, which we cannot enter into here, that is not true. They *can* help it, if the effort be made. Why, the mere presence of a stranger whose good opinion is at all respected, will restrain most of those who talk thus! Effort may, however, be especially directed towards certain practical points, which, when thus defined, are more readily seen to be possible of attainment.

For instance, in every household there must be occasions for reproof: and to withhold this when necessary and deserved, is not true charity. Servants need it, and still more children. But the method of some people is simply ruinous in its results upon the temper of those reproofed. They never have done, but keep on harping upon the fault, and "nagging" at the offender, till the result is often an amount of exasperation beyond endurance, and that may burst into an explosion. The same often takes place between husband and wife. Reproof or remonstrance should always be calm and considerate, even if it must be sharp; still, by all means let it have the full weight and severity any occasion really requires. But *when all has been said* that ought to be said, then the matter should be dropped: constant niggling reproach simply breaks the heart and the temper of any one subjected to it. A servant or child will stand one formidable "dressing-down," which is known to be deserved, who cannot stand a dozen occasions of reproach afterwards. Constant grumbling, or little nasty remarks, have the same effect, and any one ought to be simply ashamed to say that he or she "cannot help" this kind of thing.

One more definite hint. A spirit of captious or constant *contradiction* should be resolutely kept in check, by the parents in themselves, and also in their children. Nearly all average children are naturally prone to this: they are instinctively observant and critical, and if they hear anything they think not absolutely correct, they naturally rush to correct it. If some one says, "I had a beautiful walk of eight miles to so-and-so and back," such a child hastens to correct the statement by the remark that "It couldn't be eight miles, for it's only two and a half to so-and-so." If such a habit is allowed, it rapidly develops, even in after-life, and nothing is more destructive of peace and good manners. A child needs to be *taught* that truth does not require constant potty corrections of this sort, even when they are valid; and that to offer them, except when truth does really demand it, is an absolute rudeness. But even many heads of households are far too captious with each other's remarks in this way, and the result is lamentable. If such a spirit of contradiction or correction has prevailed in a family, it will be hard to exorcise it; yet it can be done, if it be first pointed out and clearly seen. Even the example of one member of a family may do wonders, and the power of simple *silence* in the face of flat contradiction, or of some other striking personal rudeness, is greater than that of any other method of reproof.

There is a story told of a husband and wife, between whom constant bickering and fault-finding had at last produced a weary estrangement, amidst which all earlier romance and affection had been forgotten, to be replaced by a dreadful, half-acknowledged longing for deliverance from a tie now felt to be hateful. Under the influence of this feeling, each repaired, with half fear and half hope, to the neighbourhood of the church porch on the Eve of St. John, when and where many country people still believe that all who are to die in the parish during the following year may be seen by those who thus watch for them. Neither knew of the other's visit, and so each, beholding the other, received the full impression that this other would be numbered with the dead before twelve months had elapsed. For a little while a secret, guilty sense of satisfaction was felt; but very soon both, realising how short a time remained to them together, began to think of earlier and better days, and to feel that allowance might well be made for hasty words and actions, in face of the final parting so swiftly approaching. It was not worth while to resent every little provocation,

little things might even be borne with, when it would so soon be all over for ever! Thus each of them became by degrees more tolerant and forbearing, and that increased still further the kindly feeling; until under the new and strange gentleness the old tenderness was more than revived. With this, however, there came to both most heart-breaking sorrow; for the end of the year drew nearer and nearer, and then each believed the other would be taken away. Thus it went on, each wondering at the other's increasing sadness, till both hearts were bursting with repressed grief; but at last the burden of mutual love and yearning regret grew intolerable, a mutual confession revealed the mutual secret, and the reunited pair threw themselves into each other's arms.

Whether this story be true or not, it contains the true moral of happy family life, and it suggests a motive for resolute striving after peace in the family with which we may fitly close. That erring couple were shown their faults, and reunited, by the expected approach of death. But the shadow of either death or separation hovers over every household. Not long will they be all together as such; a few short years, and death removes one or the other, while others depart to go their several ways. How precious should those years be, during which alone may be stored up a harvest of mutual charities and kindly words and feelings! The Master of Life has warned us that there are but so many hours before the night cometh, wherein no man can work—not that we may sit down and grieve, or cherish morbid feelings about it, but that we may make the most of the working-day given to us. Surely He must most of all have had the Family and the Home in His mind, and the example just cited may help us to take heed to the warning. Children can do so much *now* to rejoice their parents' hearts, and make each other's lives happy and joyous: but, though all eternity lie before them, the opportunities for *that* will soon be gone. So it is with parents, so with husbands and wives, so with even a mistress and her servant. Looked at so, what a treachery, what a robbery, what a wrong, is every needless angry word; is any and every breach of that great commandment by which the Master ordained that our service to Himself shall be rendered in actual deed and word to our brother, whom we have seen! Looked at so, what a constant, pressing, paramount duty it becomes for every one to seek earnestly, by precept, and still more by example and constant endeavour, for Peace in the Home!

THE END.

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